STATERA
BALANCING THE GRID

BERDEN SOLAR SCHEME

Environmental Statement Appendix 2.2

Outline Code of Construction Practice

November 2022

CONTENTS

1 INTRODUCTION

Background

1.1 This document forms Appendix 2.2 of the Environmental Statement (ES) produced by Berden Solar Limited (the Applicant), which accompanies the application for planning permission for the construction and operation of the proposed Berden Solar Scheme (referred to as 'the Project').

1.2 The proposed development site (the Site) is located on approximately 65.84 hectares (see Chapter 3) of arable land between the villages of Berden and Stocking Pelham, south of Ginns Road in the district of Uttlesford, Essex. The Site is centered on national grid reference 100m square TL461291.

1.3 The proposed development is for the development of a ground mounted solar farm with a generation capacity of up to 49.99MW, together with associated infrastructure and landscaping. It would comprise the following key elements:

- Approximately 91,056 photovoltaic solar panels
- Nine inverter units
- A small electrical substation
- A reconfigured field access off Ginns Road to provide access to the Site
- Landscaping and deer fencing.

1.4 This document comprises the Outline Code of Construction Practice (CoCP) and sets out the principles of good environmental management to be followed in order to avoid or minimise environmental impacts. This includes principles for management of construction noise, dust, traffic,materials storage and waste management, drainage and ecological protection.

Purpose of the Outline CoCP

1.5 This Outline CoCP sets out the management measures that the Applicant and its contractors will be required to implement for all construction activities associated with the Project. These measures have been identified during the design of the Project and as part of the environmental impact assessment (EIA) process reported in the Environmental Statement (ES). They include strategies, control measures and monitoring procedures for managing the potential environmental impacts during the construction phase and limiting disturbance from construction activities as far as reasonably practicable.

1.6 This CoCP sets out the good practice measures that will be utilised during construction of the Project and provides site-specific measures applicable to the Project site, based on the findings of the ES.

Scope of the CoCP

1.7 The Project site comprises approximately 65.84 hectares (ha) of land, of which the proposed built out solar infrastructure will cover 21.69 hectares (ha) of land, which was previously used as arable farmland.

1.8 The scope of this CoCP applies to activities during the construction phase of the Project, including construction of the solar scheme, implementation of biodiversity and landscape planting, and use of the site access from the existing agricultural access track from Ginns Road, between the villages of Stocking Pelham and Berden . In addition, it summarises measures set out within the Construction Traffic Management Plan (ES Volume 3; Appendix 2.1) and Access Technical Note (ES Volume 3; Appendix 1.3) that accompany the application to manage construction traffic numbers and routing.

1.9 The framework and measures set out in this CoCP are relevant to all contractors undertaking work on the Project.

Implementation of the CoCP

1.10 This Outline CoCP will be developed into a final CoCP or Construction Environmental Management Plan (CEMP), which will be agreed with Uttlesford District Council prior to the commencement of construction. The final CoCP will include the measures set out in this Outline CoCP, together with any further detail available at that time.

1.11 The final CoCP will be supported by detailed Construction Method Statements, which will provide method statements for construction activities detailing how the requirements for the CoCP are met. Implementation of the CoCP and method statements will be the responsibility of the Principal Contractor (with methodologies passed on in turn to any subcontractors).

1.12 The method statements will set out:

- how the construction activities will be undertaken (including construction methods and thetypes of plant required);
- appropriate risk assessments; and
- a consideration of relevant environmental, and health and safety issues.

1.13 The method statements will set out environmental control measures relevant to the construction activity, which will build on the framework of measures set out in the CoCP. This will include an aspects and impacts register for the relevant activity to identify the key environmental features and constraints and the managerial and engineered controls to be put in place to reduce environmental impacts. This will include environmental monitoring arrangements.

1.14 For those activities that are not covered by specific method statements, the principles and measures set out within the CoCP will be implemented through general working practices to beadopted by the Principal Contractor (and any subcontractors).

1.15 All construction staff will be required to follow the CoCP and implement the measures to control the environmental impacts during construction. The requirement to comply with the procedures set out within this CoCP will be included in the contract conditions for each element of the works, including the supply chain as appropriate.

Training

1.16 All construction staff will receive training on their responsibilities for minimising the risk to the environment and implementing the measures set out in this CoCP.

1.17 The Principal Contractor will ensure that contractors employ an appropriately qualified and experienced workforce. The Principal Contractor will also be responsible for identifying the training needs of their personnel to enable appropriate training to be provided. Training will

include site briefings and toolbox talks to provide the necessary knowledge on health, safety and environmental topics, and the relevant environmental control measures pertinent to the construction activities to be carried out that day.

Safety

1.18 The Principal Contractor will be responsible for the production and implementation of a Construction Phase Health and Safety Plan to demonstrate compliance with requirements of legislation in relation to health and safety. This will set out how health and safety risks are identified and managed in accordance with current best practice and legal requirements.

Considerate Constructors Scheme

1.19 In addition to meeting the principles of this CoCP, the Principal Contractor will be required to sign up to and implement the Considerate Constructors' Scheme (CCS). The CCS is a UK initiative established to raise standards in the construction industry. Its Code of Considerate Practice sets out the scheme's expectations of all registered sites, companies and suppliers. These expectations are summarised below.

- Care about Appearance: constructors should ensure sites appear professional and well-managed.
- Respect the Community: constructors should consider their impact on neighbours and the public.
- Protect the Environment: constructors should protect and enhance the environment.
- Secure everyone's Safety: constructors should attain the highest levels of safety performance.
- Value their Workforce: constructors should provide a supportive and caring working environment.

2 PROJECT DESCRIPTION

Site and Surrounding Area

2.1 The Site is situated between Berden in Uttlesford, Essex and Stocking Pelham in the district of East Herts, Hertfordshire (Figure 2.1).

2.2 Ginns Road between Berden and Stocking Pelham forms the northern boundary of the Site. The footpath (5/25) between the water tower north-west of Brick House End and Crabb's Green Farm marks the southern boundary. The western site boundary is delineated primarily by Uttlesford's boundary with East Herts District Council (EHDC) whilst the eastern site boundary follows footpath 5/22 opposite the Benskins Close development in Berden south for some 700 metres before turning west to the northern edge of the small copse and then south along the western edge of the copse and subsequent field boundary to the water tower.

2.3 The application site comprises three large fields, currently arable. The fields are divided by hedges which are typically 2 – 6m high and support the occasional large tree. Two field boundaries also include two small deciduous copses, one of which is within the application boundary, and one immediately adjacent to it. Tracks for farm vehicles run alongside most of the internal hedges and some of these are the routes of the public rights of way (PRoW). There are no landscape features within the fields, such as mature trees or structures.

2.4 The fields are drained via a series of ditches which take the water in a northeast direction towards Berden and the catchment of the Stort.

2.5 Six County or Local Wildlife Sites (CWS/LWS) which are non-statutory designated sites, are located within 250 metres of the Site. Park Green (a registered common) and Pelham Centre Meadow (a grassland) are both, in part, adjacent to the site's southern boundary. Further details of these and other sites designated for their ecological value are provided in ES Volume 1, Chapter 7 and ES Volume 3, Appendix 7.1.

2.6 The Crump scheduled ancient monument, a medieval ringwork fortification, is located c.620 metres to the east of the application site.

Proposed Works

2.7 The Project includes the following key components:

- the solar scheme (49.99 MW) comprising 91,056 panels;
- 9 inverters;
- earthworks and installation of concrete bases upon loose gravel platforms to support each of the 9 inverters;
- spare parts container;
- new connection compound;
- one substation including transformers, busbars andother equipment (maximum height of 6 metres);
- underground cable connections between the panels, inverters, substation and new

connection compound

- post and wire deer fence (2 metres high) surrounding the solar scheme and switch and control unit, and a palisade fence surrounding the substation;
- internal access tracks and use of the existing agricultural access track;
- one temporary construction compound and laydown area; and
- the planting of native woodland, hedgerow, scrub and wildflower meadows.

2.8 The proposed layout plan is shown on Figure 2.2.

3 CONSTRUCTION

Construction

3.1 The Project will be constructed in an environmentally sensitive manner and will comply with all relevant legislation and codes of practice to minimise adverse impacts on the local community andenvironment as far as reasonably practicable.

Environmental Management

3.2 The Principal Contractor is required (as a minimum) to have an environmental policy and ensurethe following measures are in place:

- procedures to be implemented to monitor compliance with environmental legislation and measures in this CoCP;
- staff competence and training requirements; and
- record-keeping arrangements.

3.3 The Principal Contractor will be required to plan their works in advance to ensure that principles set out in the CoCP are complied with. This will be documented in the method statements for thekey construction activities.

Legal and Regulatory Requirements

3.4 A function of the CoCP is to make construction staff aware of their legal duties and environmentalresponsibilities during the construction of the Project. A framework of legislation has been compiled and is contained within Annex A. The list is not exhaustive and does not absolve construction staff from complying with other relevant legislation. The legislation register will be reviewed and updated during the construction process.

3.5 Specific construction-related activities may be subject to regulatory controls through the provisionof consents, licenses or permits, including a protected species licence.

Best Practice Guidance

3.6 Construction activities will be undertaken in accordance with the following best practice guidelines:

- Bat Conservation Trust (BCT) Interim Guidance ‘Artificial Lighting & Wildlife’ (2014).
- Best Practicable Means under Section 72 Control of Pollution Act (1974) as amended.
- British Standard BS 10175 (British Standards Institution (BSI), 2011 and amended 2017). Investigation of Potentially Contaminated Sites (BSI 10175:2011+A2:2017).
- British Standard BS 5837: 2012 (Trees in Relation to design, demolition and construction -Recommendations).
- British Standard 5228: Code of practice for noise and vibration control on construction andopen site. Part 1: Noise +A1:2014.
- British Standard 5228: Code of practice for noise and vibration control on construction andopen site. Part 2: Vibration.
- British Standard for the ‘Code of practice for ground investigations’

(BS8485:2015+A1:2020)(BSI, 2020).

- British Standard requirements for the 'Code of practice for the design of protective measuresfor methane and carbon dioxide ground gases for new buildings' (BS8485:2015+A1:2019) (BSI, 20119).
- CIRIA C741 Environmental Good Practice on Site.
- CIRIA Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors.
- CIRIA Guidance on the Construction of SuDS.
- Environmental Protection Act 1990: Part 2A - Contaminated Land Statutory Guidance(Department for Environment, Food and Rural Affairs (Defra), 2012).
- Groundwater Protection Position Statements (Environment Agency, 2017 and amended2018).
- Institute of Air Quality Management (2014) Assessment of dust from demolition andconstruction.
- Land Contamination Risk Management (LCRM) (Environment Agency, 2020).

Roles and Responsibilities

3.7 Whilst the key roles for the construction team have not been assigned at the time of writing, the environmental roles required to implement this CoCP are set out below. The list of responsibilitiesand roles is not exhaustive. The Applicant and Principal Contractor will agree the appointment of these roles.

Berden Solar Ltd

3.8 Berden Solar Limited will retain overall responsibility for the Project at all times and will require that all construction activities are in compliance with the CoCP and with statutory and consent obligations. This Outline CoCP sets out overarching requirements for all construction activities.

Principal Contractor

3.9 The Principal Contractor will be responsible for following the principles of the CoCP throughout construction of the Project and for managing their sub-contractors and for ensuring they understand and comply with the environmental obligations of this CoCP.

4 GENERAL REQUIREMENTS

Construction Programme

4.1 The timing of the Project will be dependent on securing planning permission and the discharge of planning conditions. The indicative construction programme sets out a programme of approximately five to six months duration. It is assumed that construction is likely to commence during 2024.

Construction Environmental Management

4.2 Construction of the Project will be managed through the final CoCP and method statements. This Outline CoCP will be developed into a final CoCP (or CEMP) , which will be agreed with Uttlesford District Council prior to the commencement of construction. The final CoCP shall include the measures set out in this Outline CoCP, together with any further detail available at that time.

4.3 The final CoCP will be supported by detailed Construction Method Statements, which will provide method statements for construction activities detailing how the requirements for the CoCP are met. Implementation of the CoCP and method statements will be the responsibility of the Principal Contractor (with methodologies passed on in turn to any subcontractors).

4.4 A Construction Traffic Management Plan (CTMP) has been produced and can be foundin ES Volume 3; Appendix 2.1.

Construction Activities and Plant

4.5 Construction activities at the Project site will comprise:

- enabling works: improvements to the site access, including creation of internal access trackswithin the solar site, setting up of working areas and earthworks/regrading of the site;
- ground and main civil works: including:
  - installation of concrete bases and gravel platforms;
  - substructure and superstructure works for substation and switch/control unit;
  - delivery of panels and invertors;
- electrical connection works;
- planting in accordance with the landscape strategy; and
- commissioning.

4.6 The project is anticipated to utilise standard construction methodologies (including the potential requirement for piling) for the construction of a solar farm.

4.7 The solar site will be fenced during construction.

Construction Working Hours

4.8 Working hours would be 07:00 to 18:00 hours Monday to Friday, 07:00 to 13:00 hours on Saturday and at no time on Sundays or on public or bank holidays during the winter months (Oct – Mar). During the summer weekday working hours would be extended to 20:00 hours.

4.9 Any planned changes to the working hours will be agreed with Uttlesford District Council prior to the activities being undertaken.

4.10 Up to an hour before and after the normal construction working hours, the following activities maybe undertaken:

- arrival and departure of the workforce at the site and movement around the Project site thatdoes not require the use of plant;
- site inspections and safety checks; and
- site housekeeping that does not require the use of plant.

4.11 Non-noisy activities such as fit-out within buildings may be undertaken outside of those hourswhere these will not cause disturbance off-site.

Construction Working Areas and Laydown

4.12 A number of temporary facilities will be required during construction including:

- temporary offices and welfare facilities;
- storage area for materials, fuels, plant and equipment;
- waste management areas; and
- car parking facilities.

4.13 A temporary construction compound and laydown area will be located on site. All construction works will be contained within the Project site boundary (which includes the construction compound, the solar site and the access track). No additional construction areas are likely to be necessary.

4.14 Storage areas will be bunded in accordance with good practice to mitigate any spillages of potential contaminants and will avoid being located in areas of vegetation or habitat to be retained.

Construction Workforce and Access

4.15 Construction traffic will come from M11 with the majority of traffic travelling from the south. As set out in the CTMP (ES Volume 3; Appendix 2.1) the construction vehicles will come off the M11 at Junction 8 and be routed to Site via the A120. Traffic will take the first exit from the Homebase roundabout onto the B1383 before turning immediately right on to Michaels Road. Construction traffic will then take the third exit on to Hazel End Road, following Hazel End Road on to Carters Hill, through the village of Manuden and continuing north onto Manuden Road. Construction traffic will then turn left on to Berden Road, passing through the village of Berden and on to Ginns Road, before turning left into the Site, via the existing agricultural access which will be upgraded.

4.16 The existing access track has a concrete apron of approximately 8m width and 5m depth adjacent the Ginns Road carriageway before reverting to a consolidated stone track of approximately 3.25m width through the field itself. It is currently gated at a point approximately 7m back from the edge of carriageway. It is proposed that this existing access be upgraded to facilitate vehicle access during construction of the solar farm. It will also be retained post completion of the construction operations to allow for future maintenance access to the Site. Further details of the Site access are set out in the Access Technical Note (ES Volume 3; Appendix 1.3) whilst further details of the upgrading of internal access tracks are set out in the CTMP (ES Volume 3; Appendix 2.1).

4.17 During construction the Site will be accessed via a Site Security Checkpoint located at the entrance to the construction site. Unrestricted access is not allowed without undertaking a Site-Specific Induction, Assessment and Approval. In the absence of this training and approval, visitors to site will always be escorted by a Site member in possession of this training and authorisation. A temporary compound area will be established next to the Site to allow for the set down of HGVs and materials relating to the construction of the Site. It is proposed the Site will be a Safe 6 site and all personnel working or carrying out deliveries to site will require as a minimum Safety Helmet (Hard Hat), Hi-Vis Tabard, Coveralls, Gloves, Light Eye Protection, Safety Boots. For temporary visitors, spare sets of Light Eye Protection and Hard Hats will be provided but it is the expectation that all deliverers/collection persons will have all the equipment with them. It is a requirement that all site personnel and visitors sign in and out of the site on all occasions.

4.18 The Site Manager or his designated deputy will be responsible for supervising, controlling and monitoring vehicle movements to and from the Site as well as whilst the vehicle is on site. Ensuring that there are suitable arrangements for the safe delivery and collection of the vehicle load. All plant, delivery/collection vehicles and cranes will be supervised by a Banksman when reversing. Height Restriction Barriers (Goal Posts) will be installed where there is a potential for accidental contact with overhead infrastructure. Similarly restricted access areas will be identified and barriered. Site personnel vehicles will be parked in a designated area connected to the Site Welfare Area via a Safe Pedestrian Access/Egress Route.

4.19 Every effort would be taken to minimise the effects of traffic associated with the construction phase of the project. Materials and resources would be sourced locally, where possible, and deliveries and construction traffic would endeavour to avoid travel during commuter peaks.

4.20 Site personnel vehicles will be parked in a designated area connected to the construction compound via a safe pedestrian access/egress route.

4.21 Construction traffic will be managed via the Construction Traffic Management Plan (CTMP) (ES Volume 3: Appendix 2.1). Where possible, deliveries and collections will be restricted to the hoursof 09:30 – 16:00 weekdays.

Construction Vehicles

4.22 The type of construction vehicles would be selected by the contractor prior to and during the construction phase. However, the following vehicles would typically be used during construction:

- Excavators;

- Cranes: required for assembly and erection;
- Low loaders: required for transport of construction equipment and plant;
- Concrete lorries;

4.23 The development will be subject to a 6-month construction period, which will comprise a relatively intense 3-month period at the start where all the components are delivered to the Site and the following three months will comprise the construction of the solar scheme.

4.24 An average of up to 50 construction workers are forecast to be on site during the peak civils construction phases. Car sharing to and from Site will be encouraged during construction. A temporary car parking area (including spaces for minibuses) will be provided on the site within a contractor's compound. Parking will therefore be contained within the site and no unnecessary parking will occur on the local highway network As a result of the proposed shift hours, no Site personnel trips will occur during the traditional AM and PM network peaks.

4.25 The location of where staff will travel from is unknown at this stage as it will depend on the appointed contractor. However, a number of the non-local workforce will stay at local accommodation and general operatives will be transported to the site by minibuses to minimise the impact on the local highway network. The number of car trips to the site will be minimised to those senior staff such as project managers and the Health and Safety Executive.

4.26 The construction period will include the use of HGVs to bring the equipment onto the site and this will be strictly managed to ensure that vehicle movement is controlled and kept to a minimum. It should be noted that unlike wind farms, the construction of a solar farm does not require equipment to be delivered by abnormal loads (i.e. vehicles over 16.5m in length). There could be up to 20 lorries per day arriving and departing during the peak construction period.

4.27 The total number of HGVs is estimated to be 350, over the 6-month construction period this averages at 2.2 HGVs per day (over a 6-day week), however this number is likely to be higher during the enabling and ground works phases and lower during the commissioning period.

4.28 Deliveries to the site will be managed to avoid highway network weekday peak hours. Construction work and construction traffic movements shall not take place on Sundays, bank holidays or after 13.00 on a Saturday unless such work is associated with an emergency or with the prior written consent of the local authority

General Site Layout and Good Housekeeping

4.29 A good housekeeping policy will be applied to the construction site at all times. As far as reasonably practicable, the following principles will be applied.

- All working areas will be kept in a clean and tidy condition. Contractors shall not bring waste onto site and waste will be removed at frequent intervals. Burning of materials on site will beprohibited.
- Hoardings and security fences will be inspected frequently, and repaired and re-painted as necessary.
- Reinstatement/good upkeep of street surfaces, even where temporary.
- Street cleaning (avoidance of mud on the road).
- Adequate welfare facilities will be provided for construction staff.
- Designated smoking areas will be provided at the Site compound and will be equipped with

containers for smoking wastes. These smoking areas will be located away from the Site boundary.

- Wheel washing facilities will be provided at key exit points from the construction site and cleaning of the underside of the vehicle will also be required. Where practical, vehicles willonly stand on hard surfaces rather than soil.
- Site entrances/gates will be positioned to minimise impact from traffic congestion and noise transmitted from construction site activities and deliveries.
- Open fires on site will be prohibited at all times.
- All necessary measures will be taken to minimise the risk of fire and the Principal Contractorwill comply with the requirements of the local fire authority.
- Waste from the construction site will be stored securely to prevent wind blow.
- Waste (particularly food waste) will be removed from the welfare facilities on a daily basis.

Site Security and Fencing

4.30 Site security is of the utmost importance throughout any construction programme. The Site will be securely managed and coordinated with existing Berden Solar Ltd site security operations.

Construction Waste

4.31 The Project will largely be assembled from components that have been pre-manufactured off-site, such as the panels and inverters. Construction waste from assembling and installing these components on-site will be minimal.

4.32 All waste generated will be disposed of by a suitably licensed waste contractor.

4.33 Works at the Project site are estimated to require the excavation of spoil, depending on the final site arrangement and foundation design. This is expected in part to be accommodated on site, as part of the site cut/fill balance. In the event that any material from the site is identified as not beingsuitable for use on site, some material may need to be transported away from the site to a suitablylicensed site.

General Requirements

4.34 Prior to the commencement of any construction works, a Site Waste Management Plan will be produced. This will assess all waste streams that may be produced including volumes likely to begenerated and also identify the waste management action proposed for each different waste typein line with the waste hierarchy. No building demolition is proposed as part of the Project.

4.35 Contractors will ensure that all waste types will be subject to controlled collection and storage on- site, to keep the construction site tidy, avoid unsightly accumulations of waste and minimise dust, pest infestation, odour and litter. Waste skips will be covered where there is likelihood of wind- blown wastes and dusts. If skips contain potentially contaminated materials, they will be covered toprevent rainwater ingress. Storage areas will be secured to prevent unauthorised deposition of waste. Wastes, including waste skips, will not be stored in areas of the site adjacent to watercourses and ditches.

4.36 Waste transfer notes and consignment notes will be held by the Berden Solar Ltd responsible

officer and will describe fully the waste in terms of type, quantity and containment in accordancewith the relevant regulations. Waste will only be transferred to sites approved by the Applicant to satisfy the duty of care requirements.

Re-use of Excavation Materials (if required)

4.37 Material will only be re-used on site in accordance with the Environmental Permitting Regulationsor appropriate approved Code of Practice e.g. Contaminated Land: Application in Real Environments (CL:AIRE) or Waste Resource Action Plan (WRAP).

4.38 In common with storage of all waste, controls will be used to prevent release of airborne dust fromspoil heaps and roads such as the use of covers or by damping down.

4.39 Contractor(s) will liaise with suppliers to enable packaging material to be sent back for reuse.

Segregation and Recycling

4.40 Opportunities will be investigated to maximise the recycling potential of construction materials where practicable.

4.41 Recyclable materials such as metals, timber, cardboard, cans and glass will be segregated and recycled where possible.

Radioactive or Hazardous Waste

4.42 No radioactive or hazardous waste is known to be present on the Project site and, therefore, no specific measures are required.

Use of Natural Resources

4.43 The storage and use of resources throughout the construction phase will follow industry good practice and will include the following as below.

4.44 The contractor will identify the main types and quantities of materials required for construction of new buildings in order to assess potential for sourcing materials in an environmentally responsible way. The construction specification will place preference, when options are available, on the use ofmaterials with a high recycled content.

4.45 All timbers used as primary structural elements will be required to be Forest Stewardship Council (FSC) certified.

4.46 The following measures will be adopted.

- Where practicable, use recycled materials from a sustainable source.
- Where possible the Contractor will re-use existing materials or procure materials with a cycled content or from a sustainable source.
- Procurement orders should be 'timely' and 'just enough' to minimise storage time andwastage.
- Construction materials (e.g. dry cement) shall be protected from the rainand wind to

prevent damage.

- Concrete / cement materials shall be stored at least 5 metres away from surface water drains wherever practicable to minimise risk of pollution.
- Materials where practicable will be ready cut to size to limit off cut waste.
- Stockpiles will be fenced off in a designated place on site and covered or damped down (iflikely to generate dust).
- Where opportunity arises the return of unused materials to the supplier will be encouraged.
- Where practicable, all plant and equipment will be turned off when not required and at the endof each working day.

Lighting

4.47 Directional lighting may be required during normal construction hours in winter. Outside normal construction working hours, motion-activated directional security lighting may be used at the Project site.

4.48 As far as possible, task lighting will be used for specific works to direct light towards the working areas during the night time. Such task lighting will be positioned at low level on posts around the Site and directed at the most frequently used areas of work. However, some floodlighting will be required for accesses and walking routes. Solid fencing will be used to limit light escaping beyondthe boundaries.

Pest Control

4.49 The risk of pest/vermin infestation will be reduced by ensuring that food waste (from the welfare facilities) or other putrescible waste is stored appropriately and is regularly collected (i.e. daily), and effective preventative pest control measures are implemented.

4.50 The following measures will be adopted:

- removal or stopping and sealing of drains;
- prompt treatment of any pest infestation and arrangements for effective preventative pestcontrol; and
- appropriate storage and regular collection of putrescible waste.

4.51 Any pest infestation will be dealt with promptly and notified to the relevant local authority as soonas practicable.

Communications

4.52 Berden Solar Ltd and the Principal Contractor will adopt a proactive approach to communications. They will provide a dedicated point of contact to manage communications with local residents, businesses, emergency services and the local authority. The approach will be coordinated through Berden Solar Ltd’s communications team.

5 ENVIRONMENTAL CONTROL PLANS

Historic Environment

5.1 A targeted programme of archaeological investigation prior to construction will be agreed with the archaeological advisers to Uttlesford District Council. This will enable a better understanding of the presence, nature and date of any archaeological remains within the Project site and allow for the development of an appropriate strategy to avoid, reduce or offset any impacts that could occur as a result of construction. An Outline Written Scheme of Investigation (WSI) appended to the ES (Volume 3; Appendix 6.2) sets out the required scope, aims and approach to the initial trial trench evaluation of the historic environment on site.

Landscape and Visual Resources

5.2 Visual analysis indicates that the proposed solar farm will be well screened by existing tree and hedge cover which lies to the south, west whilst to the east the Site can be quickly screened by hedge planting. The most significant views will be from the Stocking Pelham to Berden road (Ginns Road) and higher ground further north. For this reason, it is proposed to plant woodland buffers along the northern edge to augment the existing roadside tree cover and the new hedge which has recently been planted by the landowner. As well as the woodland planting some individual fast-growing trees have been specified to ensure the views from the north are screened as rapidly as possible.

5.3 The public rights of way which will pass through the solar farm will be maintained on their current alignment, set within 10 m wide corridors, within which native hedge planting will screen the solar farm from view when in leaf. Tall stature trees will be planted where there is space and where they will not cast excessive shade on solar panels when mature. On other boundaries smaller stature species such as hawthorn and field maple will be planted so that they provide sufficient screening but do not shade panels. Scots Pine is specified around the northeast corner to reinforce screening in winter to the edge of the village. The proposed planting will leave a legacy of tree and hedge cover across the Site once the solar farm has been decommissioned.

5.4 A proposed community woodland will be located between the residential properties on Ginns Road on the edge of Berden and the proposed solar farm, which once established will block views of the solar farm and beneficially the existing substation and transmission lines which occupy the distant skyline.

5.5 Skylark mitigation will be provided in the form of Skylark plots to be created within arable fields owned by the landowner of Berden Hall Farm.

5.6 Skylark plots are created in accordance with Countryside Stewardship management practices as set out in AB4: Skylark Plots (https://www.gov.uk/countryside-stewardship-grants/skylark-plots-ab4).

5.7 The provision of Skylark plots at a ratio of two plots provided for each potential lost territory is an accepted and widely used mitigation strategy for developments that will result in the loss of Skylark territories. Skylark plots also benefit other farmland bird species.

5.8 A Skylark plot is a 4m x 4m area of arable field that is created by one of the following methods:

- Turning off the drill during sowing to leave an unsown plot
- Sowing the crop as normal and spraying with herbicide to create the plot by 31 December

5.9 After drilling, the plots can be managed with the same treatments as the remainder of the field.

5.10 A permissive path will be created through the woodland and hedge corridor alongside Ginns Road between Stocking Pelham and Berden so that people walking between the two villages do not have to walk in the carriageway (there is no footway) but have a safe and attractive green route

5.11 All planting will be in accordance with the Planting Plan (Annex B) and will be completed prior to the operation of the proposed solar scheme.

5.12 The landscape planting will be monitored in accordance with good practice and at least for the five years after planting to ensure that any stock that dies or becomes diseased or damaged is replaced and the planting not only establishes but growths well to provide the necessary level of screening. The planting will be monitored for excessive grazing by deer which limits the ability of the planting to achieve its screening potential.

5.13 The inverter units will be finished in a recessive, muted green colour so that they blend in with the existing landscape.

Ecology and Nature Conservation

Embedded Mitigation

5.14 External lighting will be designed to allow for night-time safety and security when required, incorporating the Applicant's operational requirements. The exterior lighting scheme design will aim to minimise lighting spillage into surrounding areas and discourage trespass, to comply with the Dark Skies Campaign and recommendations in the Society of Light and Lighting (SLL) Lighting Handbook (Chartered Institution of Building Services Engineers (CIBSE), 2018). Lighting will be designed to be activated only when required.

5.15 The following measures have been incorporated into the design and layout of the Project to help avoid or reduce impacts on biodiversity, enhance, where possible, and form part of the landscapestrategy for the Project site:

- retention of existing boundary woodland;
- new native woodland planting areas;
- native shrub planting; and
- wild flower meadow

5.16 Grassland management, along with native tree and shrub planting in the green space, will enhance the value of the on-site habitats for a variety of species, including bats and reptiles.

Pre-Construction Surveys

5.17 A Construction Ecological Mitigation Strategy (CEMS) for the construction phase will be produced, to specify details of measures undertaken to avoid or minimise impacts on protected

species known or considered possibly to be present. These will include:

- A specification for pre-commencement species surveys as appropriate.
- All necessary works will be overseen by an Ecological Clerk of Works (ECoW) who can also provide advice with respect to invasive species, as necessary.
- Whenever practicable, to avoid impact on breeding birds clearance of vegetation of potential value to nesting birds (i.e. to facilitate access) will be completed out of the bird-breeding season (considered to be between mid-February and August inclusive). However, should it not be possible to avoid this season, vegetation will be inspected/surveyed by an appropriately experienced ecologist immediately before clearance (i.e. the morning of clearance works, or late in the day prior to clearance works) in order to confirm the absence of active nests. Should an active nest be located in the vegetation to be cleared or close by (depending on the species of bird) measure will be set in place as advised by the ecologist to prevent damage or disturbance to the nest until it can be confirmed by the ecologist that the nest has been abandoned or any young have fully fledged and left the nest. Protective measures will include the establishment of a works-free buffer zone around the nest.
- Due to the mobile nature of badgers, pre-construction surveys will be undertaken for badgers to check the status of the sett identified and to locate any new active setts that would need to be protected or would require a licence to disturb or close. However, should this not be practicable, measures described below will be set in place.
- Similarly, although none are anticipated to require felling, any tree to be felled will be subject to a pre-construction check to determine its current bat roost potential. Any tree with such potential will be subject to suitable surveys, as described in good practice survey guidelines (Collins 2016).

General Construction Measures

5.18 Construction working hours will be Monday to Friday 08:00 to 18:00 hours, and Saturday 08:00 to 13:00 and at no time on Sundays or on public or bank holidays. Therefore, there will be no artificial lighting on the construction site between 19:00 and 08:00 to ensure there is no artificial light spill which could impact species (e.g. foraging and commuting bats, or birds at the nearby designated sites).

5.19 The following measures will be adopted.

- The use of dust suppression equipment to reduce the spread of sediment within the Project site, so that any dust created during construction is diverted into specific drainage systems equipped with sediment interceptors.
- Areas at risk of spillage, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) to be bunded and carefully sited to minimise the risk of hazardous substances entering the drainage system or the local watercourses. Additionally, the bunded areas will have impermeable bases to limit the potential for migration of contaminants into surrounding watercourses and significant ecological habitats following any potential leakage/spillage event.
- Use of sediment fences along existing watercourses when working nearby to preventsediment being washed into watercourses.
- Spillage contingency kits will be provided in all site vehicles and daily checks will beundertaken for oil and fuel leaks.

- Application of best practice techniques of construction to ensure that drainage patterns andwater quality within the Project area are maintained.
- Timing of earth works to avoid periods of heavy rain when the risk of fine sediment beingtransported is significantly increased.
- Any retained habitats would be protected with appropriate sturdy fencing installed alongretained boundary features where they fall outside of construction areas.

Noise and Visual Disturbance

5.20 The potential impact of noise disturbance on the villages of Berden and Stocking Pelham during the construction of the Project will be mitigated though the adoption of the following mitigation measures.

- 'Toolbox Talks' conducted by a suitably experienced Ecological Clerk of Works (ECoW) to explain how contractors can minimise the occurrence of unpredictable/sudden bursts of noise (e.g. restricting the use of horns onsite).
- Implementation of the CTMP to ensure that vehicles have sufficient turning circles to minimise the frequency of reversing vehicle alarms onsite.
- If piling is required to take place during the breeding bird season (Mid-February to August inclusive), a suitably experienced ECoW would be deployed to check piling was not causing disturbance to Skylarks within the area.

Protected and Notable Species

5.21 An ECoW will be employed to oversee key elements of enabling works and construction. The ECoW will be a suitably experienced ecologist, whose role will ensure works are carried out in accordance with the measures set out in this section and to ensure compliance with internationaland national legislation and planning conditions. The ECoW will also review results of protected species surveys prior to commencement of works in different areas within the Site.

5.22 Once works are underway, the ECoW will provide ecological advice and supervision for all relevant mitigation measures and monitoring. The ECoW will complete checks for all protected species during the construction phase of the development.

5.23 Best practice measures for minimising the potential for disturbance and injury to protected specieswill be employed. These will include the following.

- Directional lighting when required. Outside normal construction working hours, motion-activated directional security lighting may be used.
- Either covering all trenches, trial pits and excavations to prevent animals becoming trapped, or providing a method of escape (e.g. a plank) where such excavations cannot be closed orfilled on a nightly basis.
- Restricting vehicle speeds across Site in order to minimise the risk of collision with animals.

5.24 The potential impact on breeding birds and reptiles will be largely mitigated through appropriate mitigation proposals which include the following.

- Allow a qualified ECoW to undertake pre-commencement surveys for nesting birds and reptiles. If nesting birds are identified these areas will be protected in accordance with relevant legislation (typically until chicks have fledged).

- Ensure that vegetation clearance where practicable occurs outside of breeding bird season (September to Mid-February).
- Conduct presence/ likely absence surveys for reptiles to determine which species are present within the Site.
- Incorporate suitable reptile hibernacula (e.g. log and brash piles) within areas of retained habitat.
- Ensure that additional construction lighting and operational lighting are located and designedin accordance with Bat Conservation Trust Guidance Note (Bats and artificial lighting in the UK) (2018).

Climate Change

5.25 Measures will aim to ensure that, where possible, construction activities generating greenhousegas (GHG) emissions are undertaken efficiently in order to minimise emissions in the following ways.

- Where practicable, pre-fabricated elements will be delivered to the site ready for assembly,which will reduce on-site construction waste and reduce vehicle movements as part of the construction process.
- Construction materials should be sourced locally where practicable, to minimise the impact oftransportation.
- Vehicles used in road deliveries of materials, equipment and waste arisings on- and off-site will be loaded to full capacity to minimise the number of journeys associated with the transportof these items.
- All machinery and plant will be procured to adhere with emissions standards prevailing at thetime and should be maintained in good repair to remain fuel efficient.
- When not in use, vehicles and plant machinery involved in site operations will be switched off to further reduce fuel consumption.
- Where possible, local waste management facilities will be used to dispose of all waste arisings, to reduce distant travelled and associated emissions.
- The volume of waste generated will be minimised, and resource efficiency maximised, by applying the principles of the waste hierarchy throughout the construction period. Segregatedwaste storage should be employed to maximise recycling potential for materials.
- Equipment and machinery requiring electricity will only be switched on when required for use. Procedures should be implemented to ensure that staff adhere to good energy management practices, e.g. through turning off lights, computers and heating/air conditioning units when leaving buildings.

Hydrology and Flood Risk

Construction Techniques and Processes

5.26 The following techniques and processes will be adopted during construction.

- The use of dust suppression equipment to reduce the spread of sediment within the Site, so that any dust created during construction is diverted into specific drainage systems equipped with sediment interceptors.

Drainage

5.27 During construction of the development, the Principal Contractor will be responsible for management and disposal of rainwater runoff generated from the Site in its temporary condition.

5.28 The contractor will develop a formal site management plan, which will address pollution management and control in relation to site plant and vehicles, raw materials storage and waste generation, to ensure that all surface water runoff generated in the temporary condition will be free of contamination.

5.29 Measures will include the following:

- installation of wheel washing facilities at the entrance to the construction compounds;
- use of sediment fences along existing watercourses when working nearby to prevent sediment being washed into watercourses;
- covers for lorries transporting materials to/from site to prevent releases of dust/sediment towatercourses/drains;
- bulk storage areas to be secured and provided with secondary containment (in accordancewith the Oil Storage Regulations and best practice);
- storage of oils and chemicals away from existing watercourses, including drainage ditches,lakes or ponds;
- concrete to be stored and handled appropriately to prevent release to drains;
- preparation of a flood response plan in the event of flooding during construction works. Thiswill include a procedure for securing or relocating materials stored in bulk;
- treatment of any runoff water that gathers in the trenches will be pumped via settling tanks orponds to remove any sediment;
- obtain consent for any works (e.g. discharge of surface water) that may affect an existing watercourse. The conditions of the consent will be specified to ensure that construction doesnot result in significant alteration to the hydrological regime or an increase in fluvial risk;
- use of a documented spill procedure and use of spill kits kept in the vicinity of chemical/oilstorage;
- storage of stockpiled materials on an impermeable surface to prevent leaching of contaminants and use of covers when not in use to prevent materials being dispersed and toprotect from rain; and
- stockpiles to be kept to minimum possible size with gaps to allow surface water runoff to passthrough.

5.30 Where extensive local topsoil stripping and earthworks is required to prepare areas of the site to the correct level for development the contractor will provide temporary drainage measures to contain runoff withinthe Site boundary, ensuring that this is sized appropriately, and that means to remove excess surface water are available for use at all times.

5.31 Surface water discharge from the Site will be passed to the receiving watercourse or soakaway ensuring that it is first passed via a silt filtration and removal device (Siltbuster) and that discharge will be via a controlled flow rate pump to the final receiving watercourse / soakaway

at a rate no greater than 2.0 l/s runoff rate for the Site.

Excavation and Piling

5.32 During any piling and / or foundation excavation, the area will be isolated from surface water until completed. Should any groundwater be encountered during excavation, appropriate dewatering methods will be considered. Any water arising from excavations will be disposed through the temporary drainage system (if uncontaminated) and following removal of silt. Should contamination be encountered during excavation, work will be stopped until appropriate measures are in place to prevent contaminant mobilisation.

5.33 Best practice construction techniques and design will be used for any excavation and piling undertaken during the installation of foundations.

Pollution Prevention

5.34 Refuelling of machinery will be undertaken within designated areas where spillages can be easily contained. Machinery will be routinely checked to ensure it is in good working condition; and any tanks and associated pipe work containing oils and fuels will be double skinned and be provided with intermediate leak detection equipment.

5.35 The following specific mitigation measures for the protection of surface water during construction activities will be implemented.

- Management of construction works to comply with the necessary standards and consent conditions as identified by the Environment Agency and Uttlesford District Council.
- A briefing for all staff highlighting the importance of water quality, the location of watercoursesand pollution prevention included within the site induction.
- Areas with prevalent runoff to be identified and drainage actively managed, (e.g. through bunding and / or temporary drainage).
- Areas at risk of spillage, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) to be bunded and carefully sited to minimise the risk of hazardous substances entering the drainage system or the local watercourses. Additionally, the bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater following any leakage / spillage. Bunds used to store fuel, oil etc. will have a 110% capacity of the volume of fuel, oil etc. to be stored.
- Disturbance in areas close to watercourses reduced to the minimum necessary for the work.
- Excavated material to be placed in such a way as to avoid any disturbance of areas near to the banks of watercourses and any spillage into the watercourses.
- Construction materials to be managed in such a way as to effectively minimise the risk posed to the aquatic environment.
- Plant machinery and vehicles to be maintained in a good condition to reduce the risk of fuel leaks.
- Drainage works to be constructed to relevant statutory guidance and approved by the Environment Agency and Uttlesford District Council prior to the commencement of construction.
- Consultation with the Environment Agency and Uttlesford District Council during the

construction period to promote best practice and to implement proposed mitigation measures.

Monitoring

5.36 Water quality monitoring will be carried out throughout the construction phase to ensure no discharge of pollutants or increase in suspended sediment occurs. A water quality monitoring methodology and schedule will be determined at detailed design stage.

Ground Conditions

5.37 The following measures will be adopted.

- Implementation of measures to prevent and control spillage of oil, chemicals and other potentially harmful liquids. This will ensure appropriate storage and handling of materials andproducts in accordance with the Guidance for Pollution Prevention (GPP) 2 2017, for example:
  - avoidance of oil storage within 50 m of a spring, well or borehole;
  - within 10 m of a watercourse;
  - where oil could run over hard ground into a watercourse;
  - secondary containment system that can hold at least 110% of the oil volume stored; and
  - avoidance of storage of oil in areas at risk of flooding.
- Refuelling of machinery will be undertaken within designated areas where spillages can be easily contained. Machinery will be routinely checked to ensure it is in good working condition and any tanks and associated pipe work containing oils and fuels will be double skinned and be provided with intermediate leak detection equipment.
- Implementation of measures to protect groundwater during construction, including good environmental practices based on legal responsibilities and guidance on good environmentalmanagement in: CIRIA C532 Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors (CIRIA, 2001).
- Stockpiling of contaminated materials on site will be avoided where practicable. Soils will be stored on site and placed within suitably constructed bunded areas and covered to prevent migration of contaminants via rainwater runoff.
- Industry standard dust suppression measures will be implemented during construction to minimise nuisance dust during the works.
- Implementation of control measures, including the use of appropriate personal protective equipment and welfare facilities. Health and Safety risk assessments will be completed priorto construction works in line with the Construction (Design and Management) Regulations 2015.

Traffic and Transport

5.38 An Outline Construction Traffic Management Plan (CTMP) has been produced prior and can befound at ES Volume 3; Appendix 2.1.

5.39 Construction traffic will come from M11 with the majority of traffic travelling from the south.

As set out in the CTMP (ES Volume 3; Appendix 2.1) the construction vehicles will come off the M11 on to the A120, then onto the B1383, on to Michaels Road, then on to Hazel End Road, following on to Carters Hill, through the village of Manuden and continuing onto Manuden Road. Construction traffic will then turn left on to Berden Road, passing through the village of Berden and on to Ginns Road, before turning left into the Site.

5.40 Construction vehicles will be subject to a booking system with fixed arrival times. This will enable the banksmen to be on the footpaths immediately before arrival to forewarn any users of the footpaths and bridleway at that time and manage the arrival of construction vehicles in conjunction with any such users of the footpaths and bridleway accordingly. This will ensure that the safety of users of the footpaths and bridleway is maintained.

5.41 Fencing will be erected around the construction site to segregate users of the PRoW from the construction area. A banksman will be situated at the compound access to hold back HGVs emerging from the site whilst there are pedestrians, cyclists or equestrians using the public bridleways and footpaths.

5.42 A series of key mitigation measures have been identified to ensure safe movement of vehicles to the site:

- it is proposed that this existing access be upgraded to facilitate vehicle access during construction of the Solar Farm. It will also be retained post completion of the construction operations to allow for future maintenance access to the Solar Farm site;
- the access gate will be set 17m back from the edge of the carriageway, with offset will allow a full sized articulated delivery vehicle to ait clear of the carriageway while the gate is opened (into the Site);
- Site Manager will control and organise the movement of construction vehicles to and withinthe site as part of the Construction Transport Management Plan (CTMP); and
- a booking system will allow the site manager to organise banksmen to ensure the safe movement of pedestrians, cyclists or equestrians using the footpaths or bridleways as part of the CTMP.

Noise

5.43 Construction works will be undertaken in accordance with best practicable means (BPM) as defined by the Control of Pollution Act 1974 (CoPA) and Environmental Protection Act 1990 (EPA),which will be applied during construction activities to minimise noise (including vibration) for sensitive receptors.

5.44 The following measures will be implemented, following the guidance contained in BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014.

- Communication: Occupiers of residential and business properties that are likely to be affectedby the works will be notified in advance of the works. A Construction Liaison Officer will be appointed to take primary responsibility for the day-to-day implementation of the CoCP during the construction phase and to act as the first point of contact on environmental matters for Uttlesford District Council (UDC) and East Herts District Council (EHDC), other external bodies and the general public. Information regarding the nature and duration of the works and named contact details for key members of staff will be displayed ona noticeboard near to the site.
- Standard Construction Hours: Working hours will be 08:00 to 18:00 hours Monday to Friday,and 08:00 to 13:00 hours on Saturday and at no time on Sundays or on public or

bank holidays. In the event that works are required outside of these hours to permit construction activities, this will be agreed with UDC and EHDC, prior to commencement of the activity. In such instances, the contractor will apply to UDC and EHDC, for written consent prior to work commencing by submitting a Section 61 application in line with the Control of Pollution Act.

- Access Routes: Access to the site will be via the M11, A120, B1383, through Manuden, Berden and onto Ginns Road. A Construction Traffic Management Plan (CTMP) will be agreed with NNC prior to the commencement of any construction works.
- Equipment: Quieter alternative methods, plant and equipment will be used, where reasonably practicable.
- Worksite: Plant, equipment, site offices, storage areas and worksites will be positioned awayfrom existing NSRs, where reasonably practicable.
- Maintenance: All vehicles, plant and equipment will be maintained and operated in an appropriate manner, to ensure that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum.
- Piling: If piling is required, the piling types and methods will be determined by design and will be confirmed by the Contractor and agreed in consultation with Uttlesford and East Herts District Councils, prior to work commencing.

Air Quality

Construction Dust

5.45 The measures set out in Table 5.1 identified by the Institute of Air Quality Management (IAQM)dust guidance (2014) will be implemented.

Table 5.1: IAQM mitigation measures for dust

Communications	• Develop and implement a stakeholder communications plan that includes community engagement before work commences on site • Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. • Display the head or regional office contact information
Dust Management	Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real- time PM continuous monitoring and/or visual inspections.
Site Management	• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduceemissions in a timely manner, and record the measures taken. • Make the complaints log available to the local authority when asked. • Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and theaction taken to resolve the situation in the log book. • Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated

	and dust and particulate matter emissions are minimised.
Monitoring	• Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of the site boundary, with cleaning to be provided if necessary. • Carry out regular dust soiling checks of surfaces such as street furniture, cars and window sills within100 m of site boundary. • Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. • Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences. Further guidance isprovided by IAQM on monitoring during demolition, earthworks and construction.
Preparing and maintaining the site	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. Use screening intelligently where possible – e.g. locating site offices between potentially dusty activities and the receptors. • Erect solid screens or barriers around dusty activities or the Site boundary that are at least as high as any stockpiles on site. • Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extended period. • Avoid site runoff of water or mud. • Keep site fencing, barriers and scaffolding clean using wet methods • Remove materials that have a potential to produce dust from site as soon as possible, unless being re- used on site. If they are being re-used on-site cover as described below. • Cover, seed or fence stockpiles to prevent wind whipping.
Operating vehicle/machinery and sustainable travel	• Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable • Ensure all vehicles switch off engines when stationary – no idling vehicles. • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. • Impose and signpost a maximum-speed-limit of 15 mph on surfaced an 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval. • Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. • Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)
Operations	• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation,using non-potable water where possible. • Use enclosed chutes, conveyors and covered skips, where practicable. • Minimise drop heights from conveyors, loading shovels, hoppers and

	other loading or handlingequipment and use fine water sprays on such equipment wherever appropriate. • Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soonas reasonably practicable after the event using wet cleaning methods.
Waste management	• Avoid bonfires and burning of waste materials.
High risk 'highly recommended' measures specific to earthworks	• Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. • Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable • Only remove the cover in small areas during work and not all at once
High risk 'highly recommended' measures specific to construction	• Avoid scabbling (roughening of concrete surfaces) if possible. • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. • For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.
High risk 'highly recommended 'measures specific to trackout	• Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. • Avoid dry sweeping of large areas. • Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. • Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. • Record all inspections of haul routes and any subsequent action in a site logbook. • Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned. • Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. • Access gates to be located at least 10m from receptors where possible.

IAQM Measures for Dust Control

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site logbook.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. Access gates to be located at least 10m from receptors where possible.

6 REFERENCES

Bat Conservation Trust (BCT) (2014) Interim Guidance 'Artificial Lighting & Wildlife'.

Best Practicable Means under Section 72 Control of Pollution Act (1974) as amended.

British Standard 5228: Code of practice for noise and vibration control on construction and opensite. Part 1: Noise +A1:2014.

British Standard 5228: Code of practice for noise and vibration control on construction and opensite. Part 2: Vibration.

British Standard BS 10175 (British Standards Institution (BSI), 2011 and amended 2017). Investigation of Potentially Contaminated Sites (BSI 10175:2011+A2:2017).

British Standard BS 5837: 2012 (Trees in Relation to design, demolition and construction - Recommendations).

British Standard for the 'Code of practice for ground investigations' (BS8485:2015+A1:2020) (BSI, 2020).

British Standard requirements for the 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings' (BS8485:2015+A1:2019) (BSI, 20119).

Chartered Institution of Building Services Engineers (CIBSE) (2018) Society of Light and Lighting (SLL) Lighting Handbook

CIRIA (2001) Control of Water Pollution from Construction Sites: Guidance for Consultants andContractors.

CIRIA C741 Environmental Good Practice on Site.

CIRIA Guidance on the Construction of SuDS.

Department for Environment, Food and Rural Affairs Defra (2012).Environmental Protection Act1990: Part 2A - Contaminated Land Statutory Guidance.

Environment Agency (2018) Groundwater Protection Position Statements.

Environment Agency (2020) Land Contamination Risk Management (LCRM).

Health and Safety Executive (2015) The Construction (Design and Management) Regulations2015

Institute of Air Quality Management (2014) Assessment of dust from demolition and

construction.UK Government (1974) Control of Pollution Act 1974.

UK Government (1990) Environmental Protection Act 1990.

Annexes

Annex A
Legislation Framework

Ecology and Nature Conservation

Conservation of Habitats and Species (Amendment) (EU Exit) regulations 2019;

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive);

Countryside and Rights of Way (CRoW) Act 2000;

Directive 2009/147/EC on the Conservation of Wild Birds (the Birds

Directive);Natural Environment and Rural Communities (NERC) Act 2006;

Protection of Badgers Act 1992;

UK Biodiversity Action Plan (UKBAP) 1994; and

Wildlife and Countryside Act (1981, as amended).

Landscape and Visual Resources

Countryside and Rights of Way Act, 2000; and

European Landscape Convention, 2000.

Historic Environment

Ancient Monuments and Archaeological Areas Act (1979);

National Heritage Act (2002);

The Planning (Listed Buildings and Conservation Areas) Act (1990); and

Town and County Planning Act (1990).

Hydrology and Flood Risk

Environment Act 2021;

Environmental Protection Act (EPA) 1990 (as amended);

Flood and Water Management Act 2010;

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017;

Water Act 2014;

Water Act 2014;

Water Resources Act 1991; and

Water Supply (Water Quality) Regulations 2016 (as amended 2018).

Hydrogeology, Geology and Ground Conditions

Environment Act 2021;

Environmental Protection Act (EPA) 1990 (as amended);

The Contaminated Land (England) Regulations 2006;

The Landfill (England and Wales) (Amendment) Regulations 2005 ;

The Special Waste (Amendment) (England and Wales) Regulations 2001; and

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

Traffic and Transport

Transport Act 2000.

Noise

Environmental Protection Act 1990 (EPA); and

Part III of the Control of Pollution Act 1974 (CoPA).

Climate Change

Carbon Budget Order 2021;

Climate Change Act 2008 (as amended 2019); and

Paris Agreement 2015.

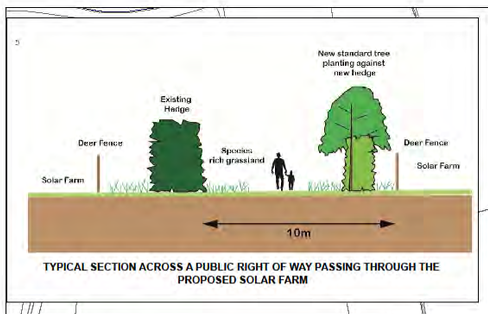
Air Quality

Air Quality Standards Regulations 2010; and

Ambient Air Quality Directive (2008/50/EC).

Annex B

Planting Plan



TYPICAL SECTION ACROSS A PUBLIC RIGHT OF WAY PASSING THROUGH THE PROPOSED SOLAR FARM

SWARD ESTABLISHMENT

The sward inside the deer fence is to be sown with a Solar Park Permanent Grassland – Low Maintenance (Ref: MIXSPPG) at a rate of 25 Kg per hectare, available from Cotswold Grass Seeds Direct (https://www.cotswoldseeds.com) or similar mix from another supplier to approval.

The woodland areas are to be sown with PIAB1 The Operation Pollinator Mix (Just Legumes) Ref: MIXOPANTS at a rate of 12.5 Kg per hectare, available from Cotswold Grass Seeds Direct or another supplier of a similar product to approval.

All areas outside the deer fence but within the Site are to be sown with: Chalk & Limestone Soil Mixture (Ref: Ref: MIXCHA) at a rate of 25 Kg per hectare available from Cotswold Grass Seeds Direct or another supplier of a similar product to approval.

ESTABLISHMENT AND MAINTENANCE

The contractor shall follow the tasks set out in the Landscape and Ecological Management Plan (Sightline Landscape 2022) for the establishment and maintenance of the trees, woodland, hedges and swards.

LANDSCAPE STRATEGY

Visual analysis indicates that the proposed solar farm will be well screened by existing tree and hedge cover which lies to the south and west. The more open areas to the east will be screened by hedge and tree planting. The most significant views will be from Ginns Road and higher ground further north. For this reason, it is proposed to plant woodland buffers along the northern edge to augment the existing roadside tree cover and a new hedge which has recently been planted by the landowner. As well as the woodland planting some individual fast-growing trees have been specified to ensure the views from the north are screened as rapidly as possible. Blocks of woodland planting alomng the eastern edge will screen the solar farm from Berden, nearby footpaths and in long distant views from high ground to the east.

The public rights of way which will pass through the solar farm will be maintained on their current alignment, set within 10 m wide corridors, within which native hedge planting will screen the solar farm from view when in leaf (see inset above). Tall stature trees will be planted where space and shading issues allow, while on other boundaries smaller stature species such as hawthorn and field maple will be planted. The proposed planting will leave a legacy of tree and hedge cover across the Site once the solar farm has been decommissioned.

The slight north facing slope means that the panels will be spaces sufficiently far apart, which combined with the short solar farm grass mix, will provide good nesting opportunities for skylark nesting. The grass sward will also allow sheep grazing within the solar farm if appropriate/practical. Species rich grassland will be specified around the margins and 2.7 hectares of permanent meadow will be established on land outside the array to the east.

PLANTING SCHEDULES AND SPECIFICATIONS

WOODLAND PLANTING

Latin Name	English Name	Size	Specification	%
Acer campestre	Field Maple	60 - 80 cm high	Bare root	10
Acer campestre	Field Maple	1.2 - 1.5 m high	Bare root feathered tree	5
Carpinus betulus	Hornbeam	0.9 - 1.5 m high	Bare root feathered tree	4
Carpinus betulus	Hornbeam	60 - 80 cm transplant	Bare root 1+1	7
Corylus avellana	Hazel	60 - 80 cm high	Bare root 1+1	25
Crataegus monogyna	Hawthorn	45 - 60 cm high	Bare root 1+1	17
Malus sylvestris	Crab apple	60 - 80 cm transplant	Bare root transplant 1+1	4
Prunus avium	Cherry	0.9 - 1.2 m high	Bare root feathered tree	4
Prunus avium	Cherry	60 - 80 cm transplant	Bare root 1+1	5
Quercus robur	Oak	0.9 - 1.2 m high	Bare root feathered tree	2
Quercus robur	Oak	45 - 60 cm transplant	Bare root 1+1	8
Tilia cordata	**Small leaved lime**	**0.9 - 1.2m high**	**Bare root feathered tree**	**4**
Tilia cordata	Small leaved lime	60- 80 cm transplant	Bare root 1+1	5
				100

HEDGE PLANTING

Latin Name	English Name	Size	Specification	%
Acer campestre	Field maple	60 - 80 cm high	Bare root 1+1	30
Crataegus monogyna	Hawthorn	45 - 60 cm high	Bare root 1+1	25
Carpinus betulus	Hornbeam	60 - 80 cm high	Bare root 1+1	13
Cornus sanquinea	Dog wood	60 - 80 cm high	Bare root 1+1	7
Corylus avellana	Hazel	60 - 80 cm high	Bare root 1+1	12
Lonicera periclymenum	Honeysuckle	60 - 90cm high	2 litre container grown	1
Ilex aquifolium	Holly	20- 40 cm high	2 litre Container grown	2
Rosa canina	Dog Rose	60 - 80 cm high	Bare root 1+1	5
Viburnum opulus	Guelder Rose	60 - 80 cm high	Bare root 1+1	5
				100

INDIVIDUAL TREE PLANTING

Latin name	English Name	Size	Specification	Code
Acer campestre	Field Maple	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Ac
Crataegus monogyna	Hawthorn	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Cm
Carpinus betulus	Hornbeam	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Cb
Malus sylvestris	Crab apple	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Ms
Prunus avium	Cherry	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Pa
Populus canadensis 'Robusto'	Poplar	Standard Tree	2.5 - 3.0 m high feathered tree	Pc
Quercus robur	Oak	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Qr
Tilia cordata	Small leaved lime	Standard Tree	8 - 10 cm girth 2.5 - 3.0m high	Tc
Pinus nigra	Scots Pine	Specimen	1.25 - 1.5 m high container grown	Ps

EXISTING VEGETATION

Any necessary works being undertaken within close proximity to the retained tree and hedgerows should be carried out in accordance with BS 3998:2010 Tree work and Recommendations, BS 5837:2012 Trees in Relation to Design Demolition and Construction and NJUG 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees and in consultation with the Tree Protection Plan for the Site. Tree and hedgerow protection measures shall be put in place prior to the start of the main construction works.

PREPARATION

On completion of the construction of the solar farm infrastructure all deleterious construction materials and waste products shall be removed from site. Liaise with the main contractor operator on health and safety requirements, particularly in relation to any excavations near buried electrical cables.

Make good any damaged/disturbed areas by infilling with topsoil previously stripped from hardstanding areas within the site, grading out and cultivating to marry in with existing levels. Areas to be planted shall have a minimum depth of 350 mm topsoil. If less than this, make up the deficit with topsoil from the site strip. By mechanical means, relieve any compaction or areas of poor drainage arising from the construction works

PROPOSED PLANTING

Planting to be supplied in accordance with BS 3936-1:1992 Nursery Stock. specification for trees and shrubs, BS 3936-4:2007 Nursery Stock, BS 8545:2014 Trees: from nursery to independence in the landscape. All landscaping works to be in accordance with BS4428:1989 "General Landscaping Works." All planting should be UK grown and, where possible, sourced from local provenance certified stock. Planting to take place during the months of November to March, preferably before January and at a time when the soil is not frozen or waterlogged.

Trees and hedges will be planted into arable farmed soil. Transplants to be notch planted and trees to be pit planted with the pit being the depth of the rootball and 20% wider than the rootball. Backfill with existing site soil.

WOODLAND PLANTING

Transplants and feathered trees for the woodland area shall be planted in a loose grid at 2.25m centres. Species shall be randomly mixed and feathered trees and transplants to be evenly distributed across the woodland area. Transplants to be protected with biodegradable, staked deer shelters Feathered trees are to be fixed to a 50 mm dia. stake, driven in until firm. Once the woodland has been planted it is to be sown with a legume rich seed mix designed for pollinators, such as A81 The Operation Pollinator Mix (Just Legumes) Ref: mixopants available from Cotswolds Grass Seeds Direct or another supplier to approval.

HEDGE PLANTING

Hedges are to comprise three staggered rows of plants. The first row is to be planted 2.5 m from the deer fence and the rows are to be 400mm apart with plants within rows at 600 mm centres. Species are to be randomly mixed along the lengths. Protect transplants with spiral rabbit guards and a cane.

INDIVIDUAL TREE PLANTING

Trees are to be planted in the positions shown with the specific species as indicated on the plan. Trees are to be double staked either side of the rootball with a looped webbing with spacers between the stakes and tree. Stakes to be driven in until firm and typically 0.9 – 1.2 metres above ground.

STATERA
BALANCING THE GRID

- Site boundary
- Proposed solar panels
- Public Right of Way
- 2m high post and wire deer fence
- Existing woodland and hedges
- New woodland and hedges
- Proposed stone access tracks
- Transformer substation (10 no. total)
- Area of woodland on the northern edge where only hazel and hawthorn to be planted to prevent shading to panels
- New community woodland
- Wildflower meadow grassland
- New public footpath
- Area of land omitted from application
- Footpath
- Restricted Byway
- 1.5 x 1.5 x 0.75 m high pile of dead wood from the site to enhance the habitat for reptiles and invertebrates
- A bird box is to be installed at these locations. The exact position to be determined by an ecologist.
- Qr Individual standard trees (See Schedule for tree species codes)

Revision	Date	Comment
A	08.11.22	Definitive Rights of Way highlighted. The scheme has beenn altered to omit panels in the easternmost field to avoid potential impacts on buried archaeology and the red line has been altered to remove this land from the application. Skylark plots removed and replaced with off site plots as mitigation.

ON BEHALF
Statera

PROJECT
Proposed Solar Farm, Stocking Pelham, Essex

DATE 28th January 2022
SCALE 1 : 2,500 @ A1
DWG No. 375_MP_04_Rev A
APPROVED GMcD

TITLE
Planting Plan

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