OAKLANDS FARM SOLAR PARK

Applicant: Oaklands Farm Solar Ltd

Environmental Statement
Appendix 4.4 – Outline Operational Environmental Management Plan
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Oaklands Farm Solar Park

Outline Operational Environmental Management Plan

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Contents

1. Introduction

1.1 Overview

1.1.1 This Outline Operational Environmental Management Plan (OOEMP) has been prepared to support an application for a Development Consent Order (DCO) for the construction, operation, maintenance, and decommissioning of Oakland Farm Solar Park (hereafter referred to as the 'Proposed Development').

1.2 Scope and Objectives

1.2.1 A DCO would provide the necessary authorisations and consents for the Proposed Development, a photovoltaic (PV) electricity generating facility with battery energy storage system (BESS) and connection to the grid.

1.2.2 The purpose of this OOEMP is to provide an overview of potential environmental impacts of the proposed development, during its operational phase, and describe the management and mitigation measures to protect the environment and sensitive receptors, both on- and off-site, and minimise potential adverse impacts on the environment.

1.2.3 The proposed development is likely to become operational (or be commissioned) in phases or parts, and an OEMP may be prepared, approved and implemented for individual parts or phases of the Proposed Development. As a result, there could be multiple OEMPs prepared in accordance with the parts of this OOEMP.

1.2.4 The objectives of this OOEMP are to provide:

- an overview of the Proposed Development operations;
- guidance on compliance with relevant environmental legislation and the Applicant policies in the operational phase;
- a means of implementing appropriate mitigation measures for the key environmental issues;
- definition of roles and responsibilities of the operational team;
- Provide a guide for the interaction with relevant government authorities and other relevant stakeholders, including the community during the operational phase of the proposed development; and
- Provide a basis for monitoring, reporting and maintaining compliance with both the Applicant and regulatory requirements for the proposed development;

1.2.5 This OOEMP is a live document. The management strategies and control measures detailed within this document and the supplementary Environmental Management Plans will be reviewed and updated, where necessary, to reflect changes introduced by the Applicant's operational team, site specific outcomes, non-conformances and recommendations arising out of inspections, meetings and audits.

1.3 The Order Limits

1.3.1 The Site is located within the administrative areas of South Derbyshire District Council, in the county of Derbyshire. The proposed development comprises the construction and operation of a solar photovoltaic (PV) electricity generating facility with battery energy storage system (BESS) and connection to the grid.

1.3.2 The area of land required for the construction, operation and maintenance, and decommissioning of the proposed development is shown on Figure 1.1: Site Location in Volume 2 of the ES and described in Chapter 4: Project Description, Volume 1 of the ES.

1.4 The Proposed Development

1.4.1 The Proposed Development is described in Chapter 4: Project Description of the ES. The Proposed Development would have a generating capacity of over 50MW and would be situated on 191 hectares of land at Oaklands Farm to the south-east of Walton-on-Trent and to the west of Rosliston in South Derbyshire. The solar farm itself, comprising photovoltaic (PV) panel arrays, a central electricity substation and Battery Energy Storage System together with access, landscaping and other works would be located on 135 hectares of agricultural land currently in use for arable production and grazing. A high voltage underground electricity cable would then run through land at Fairfield Farm and Park Farm to the north to connect the solar farm to the national grid via an electricity substation located at the former Drakelow Power Station which sits south of Burton-upon-Trent.

1.4.2 There will be string inverters at the end of each row of panels. Insofar as reasonably possible, and as an acknowledgement of potential noise from the inverters, the Applicant will aim to place these items on row ends away from the Site boundaries in proximity to residential receptors. The location of equipment and specification of equipment chosen for the operational phase will be determined when finalising the design specification.

1.5 Supporting Environmental Management Plans

1.5.1 A series of environmental management plans will be developed to support the OEMP following receipt of the DCO. Plans which will be included in the final version of the OEMP include:

- Visitor Management Plan;
- Operational Health and Safety Plan;
- Operational Emergency Response Plan;
- Operational Waste Management Plan;
- Outline Landscape and Ecological Management Plan (LEMP) (Appendix 5.6 of ES); ~~and,~~
- Outline Battery Safety Management Plan (Appendix 4.6 of ES); and~~.~~

- Outline Soil Management Plan (Appendix 1 on this OOEMP).
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2. Statutory and Policy Considerations

2.1.1 The Applicant is committed to complying with its legal obligations and other voluntary commitments. Compliance with applicable regulatory requirements concerning the operations of the Solar Farm will be achieved through:

- identifying and accessing legal and other requirements which are directly applicable to the organisation;
- consulting and involving relevant government agencies;
- internally communicating relevant information regarding legal and other requirements;
- continually auditing, reviewing, and upgrading company systems, management plans and supporting documentation; and,
- providing relevant training.

2.2 Legal and Other Requirements

2.2.1 Considerable environmental legislation applies to the operational stage of the proposed development. The expectation is that all relevant legislation, including requirements for licences, permits and / or consents shall be identified.

2.2.2 For each significant environmental aspect, the relevant applicable environmental legislation and regulations will be identified from, but not limited to, the list provided below:

- The Environmental Authorisations Regulations 2018;
- Anti-Pollution Works Regulations 2003;
- The Waste Regulations 2011.

2.2.3 Health and Safety at Work Act 1974The list of relevant legislation and its applicability to the proposed development will be reviewed and updated following receipt of planning permission.

2.3 Management System

2.3.1 This section will be completed with relevant information from the integrated management system once the system has been finalised.

2.4 Environmental Policies

2.4.1 This section will be completed with relevant information from the integrated management system once the system has been finalised.

2.5 Operational Efficiency

2.5.1 This section will be completed with relevant information from the integrated management system once the system has been finalised.

3. Proposed Development Operations

3.1 Operation Overview

3.1.1 During the operational phase, activity within the Proposed Development will be minimal and will be restricted principally to vegetation management, equipment maintenance and servicing, replacement and renew of any components that fail, and monitoring. It is anticipated that maintenance and servicing would include the inspection, removal, reconstruction, refurbishment or replacement of faulty or broken equipment to ensure the continued effective operation of the Scheme.

3.1.2 The battery cells will be required to be replaced every 8-10 years throughout the lifetime of the Proposed Development however, this is a small-scale operation which can be undertaken manually with components delivered via standard heavy goods vehicles (HGV) and work vans. There would be no need for heavy machinery (e.g., cranes, diggers) or disturbance of the Site. Depending on the final installed system and the operations profile which will determine the number of charge/discharge cycles per day. This equates to a monthly BESS cell replacement rate of 0.3% per year.

3.1.3 The BESS cell replacement will form part of the scheduled operational maintenance which requires a negligible number of vehicle trips. Maintenance of the Site is likely to follow a rolling timetable and therefore will not result in intense activity.

3.1.4 Solar panels are not expected to be replaced during the operational life of the Proposed Development, save for individual instances of damage or unexpected failure of specific panels, and that to account for this an annual replacement rate of 0.2% per year has been assumed in the ES. This results in an estimated 500 panels replaced per year. A standard HGV can hold approximately 750 solar panels. Therefore, a single HGV two-way movement and associated unloading vehicle (telehandler) is sufficient to deliver/remove the annual amount of panels that need to be replaced due to damage or unexpected failure. To clarify, wholesale replacement/upgrade of all panels on site is not anticipated.

3.1.5 Annually during the operational lifetime of the Proposed Development, the Applicant will provide notification, which is not subject to approval, of planned maintenance activities to the local planning authority for the forthcoming year. The notification will include supporting environmental and traffic information to evidence that there will be no materially new or materially more adverse environmental effects arising from any planned maintenance activities when compared to those identified in the assessment of the operational phase in the ES. This supporting information must include confirmation that the approach to planned maintenance set out in the notification is consistent with the approved Operational Environmental Management Plan.

3.1.6 The replacement of the solar panels cannot take place until the local planning authority has provided confirmation that they agree that the activities will not lead

to materially new or materially different environmental effects to those identified in the assessment of the operational phase in the ES.

3.1.7 Along the Grid Connection Route operational activity will consist of routine inspections (schedule to be determined) and any reactive maintenance such as where a cable has been damaged. It is anticipated that there will be up to 3 permanent staff onsite during the operational phase of the Solar Farm, resulting in a small number of traffic movements per day. There will be no access to the Site for the general public. The permissive path which runs through the Site will be fenced and secure to prevent unauthorized access.

3.2 Operation Programme

3.2.1 Operation of the Proposed Development will start following construction, currently scheduled for 2027. The Proposed Development will operate for approximately 40 years, with decommissioning assumed for the purposes of the environmental impact assessment to be not earlier than 2067.

3.3 Working Hours

3.3.1 The Proposed Development will generally be manned during normal working hours (9 to 5pm) 5 days a weeks. There will be approximately two full time members of staff.

3.4 General Considerations

3.4.1 Access Controls

3.4.2 The Applicant will display signage to advise visitors and the general public that relevant areas of the site are private and not for public use.

3.4.3 Existing farm access points for operational traffic are “in-only” due to visibility concerns when exiting Site onto road network - all operational traffic will exit the site at the crossroads on Coton Road (which has permanent visibility splays).

3.4.4 Additional signage across the site will include:

- Directional and speed limit signs for vehicles; and,
- Adequate signage to satisfy work health and safety requirements.

3.4.5 Security will be maintained by fences with gates locked at all times. Fences will be inspected routinely for signs of damage and/or intruder entry.

3.4.6 Plant and Equipment Maintenance

3.4.7 All plant and equipment installed or used within the proposed development will be operated and maintained in accordance with the Proposed Development requirements. This includes all processing infrastructure and pollution control equipment, as well as track and access track within the Proposed Development.

3.4.8 Fire Prevention

3.4.9 If an on-site fire occurs, all necessary measures to extinguish associated fires will be implemented immediately. Adequate fire prevention resources have been put in place (included in the Outline Battery Safety Management Plan), and all personnel are able to access fire-fighting equipment and manage fire outbreaks at any location at the Proposed Development in accordance with the guidance provided in the Emergency Response Plan, which will be prepared prior to operations in consultation with the local emergency services.

3.4.10 Litter Control

3.4.11 Litter control will be carried out in accordance with the Waste Management Plan.

3.4.12 Criminal Activity

3.4.13 Instances of theft of copper wiring and other materials and equipment have been reported at solar farms globally. Unauthorised access has the potential to result in fire if persons are intent on damage/sabotage. To prevent unauthorised access, during all stages of the Proposed Development the Site will be suitably secure to protect from criminal damage. This includes secure fencing and gated entrances, CCTV and remote monitoring, and lighting of critical areas (secured within the CEMP, OEMP and DEMP). On site staff during all phases will also act as a deterrent to criminal activity.

3.4.14 Local Sourcing / Procurement

3.4.15 Within the confines of the procurement strategy, local sourcing of equipment and contractors will be pursued where possible, however it is noted that this procurement is subject to tendering and may be constrained by the specialist nature of some of the equipment. Local contractors will be encouraged to tender for operation and maintenance work, wherever possible, to ensure maximum benefit to local communities. Local trade organisations such as the Chamber of Commerce will be asked to provide information to local contractors to ensure they are aware of the opportunities and qualifications required to tender.

3.4.16 Once operational, the Proposed Development would employ up to three permanent staff with additional maintenance, monitoring and servicing staff that would be located offsite. However, it is proposed that existing farms will continue to operate as farms during operation of the Proposed Development. The landowners will be able to farm sheep and the dairy farm will be able to continue farming dairy cattle.

4. Mitigation and Management Measures

4.1.1 This section of the OOEMP sets out the mitigation and management measures to be included as a minimum in the detailed OEMP. It also identifies where monitoring is proposed to assess the effectiveness of the mitigation measures.

4.1.2 The operational activities could have the following potential environmental impacts:

- **Flood Risk, Drainage and Surface Water**: Impacts on water quality in waterbodies that may receive surface water runoff and hydromorphological impacts to waterbodies and effects on local flow regimes due to change from intensive agriculture and introduction of structures on site
- **Cultural Heritage**: Impacts on the setting of heritage assets due to the presence of the Proposed Development within their setting.
- **Ecology**: disturbance to wildlife from artificial lighting.
- **Landscape and Visual Amenity**: change to landscape character and visibility of operational activities.
- **Noise**: Noise from operational equipment.
- **Ground conditions**: Potential for pollutants to enter the ground.
- **Waste**: Potential to impact on surrounding environment if not stored and managed appropriately.
- **Telecommunications**: Performance of links.

4.2 Flood Risk, Drainage and Surface Water

4.2.1 In accordance with planning policy guidance runoff from the Order limits requires attenuation to ensure no increase in surface water discharge rates and to provide water quality treatment of runoff water. The Drainage Strategy at Appendix 8.1 of the ES also outlines how firewater runoff will be managed. It also includes detail on operation and management of the drainage infrastructure in order to ensure that they continue to function effectively throughout the lifetime of the Scheme.

4.2.2 There will be a minimum buffer of 8 m around watercourses (measured from the water/channel edge under normal flows) within which there will be no built development.

4.2.3 The design of the Proposed Development has included measures to avoid and minimise the risk of water pollution during its operation.

4.2.4 SuDS features will be utilised to ensure the surface water drainage strategy adequately attenuates and treats runoff from the Proposed Development, whilst minimising flood risk to the Order limits and surrounding areas.

Potential Impact	Mitigation Measures and monitoring requirements
Impacts on water quality due to run off and spillages (including fire-fighting water).	**Pollution control** Regular inspections and maintenance of all equipment will be undertaken in order to identify any leaks or damage early. Any panels which require maintenance / replacement will be removed before there is any leakage of chemicals from the sealed units.

Potential Impact	Mitigation Measures and monitoring requirements
	Any leaks will be dealt with in a way that is compliant with the prevailing environmental legislation. Solar panels will require cleaning approximately once a year. The panels will be cleaned using a solution similar to a household detergent. The final OEMP will include precise details of the cleaning product to be used, which will be agreed with SDDC through the discharge of Requirement 11(2)(c) – detailed operational drainage design. Effort will be made to undertake cleaning when the weather is dry. Therefore, no chemicals will be introduced to the environmental as a result of cleaning the solar panels. **Control of fire-fighting water** To mitigate risks from contaminated water during a fire event at the BESS and substation compounds, these areas will be impermeable, with water diverted into an underground storage area which can be isolated if required. During normal rainfall events, water from these tanks will be discharged at a rate limited to the greenfield runoff rates for the same event, with outfalls into the drainage ditch northwest of the compounds. **Disposal of foul water** Wastewater from the on-site welfare facilities would be managed by a self-contained independent non-mains domestic storage and / or treatment system.
Impact on the hydrological regime brought about by the introduction of structures	The key principle of the Outline Drainage Strategy is source control whereby all surface water run-off is discharged to ground as close to the point of interception as possible. This will include: - solar panel arrays will allow incidental run-off to infiltrate to ground below the panels. - all trackways constructed to be permeable (i.e. unsealed), and as such will maintain infiltration capacity similar to the bare soil cover. - where concrete pads are required a gravel-filled drainage trench shall be constructed around the structure, thus providing soakaway capacity equivalent to the infiltration capacity lost beneath the structure.

Potential Impact	Mitigation Measures and monitoring requirements
	In terms of flood risk, parts of the Proposed Development remain at risk of flooding from surface water, including from small channels and ditches within the Site. Solar panels are unlikely to be affected by this flooding, should it occur, and no specific mitigation is required to protect them other than ensuring the bottom edge of the panels is not within 300mm of the ground within the mapped surface water flood risk area. Inverters, transformers and the Proposed Development's substation will not be sited within the fluvial or surface water flood risk areas. Runoff from the solar panels will be allowed to percolate into the underlying soil as occurs at present. Runoff from the panels can be intercepted and buffered by the vegetation growing underneath the panels and retained prior to infiltration as with the greenfield situation. All field access tracks will be constructed of compacted gravel such that they are permeable to negate impacts to drainage. Each track shall be designed fall to a gravel filled longitudinal trench into which excess water will flow. These trenches will act as attenuation and treatment prior to infiltration. **Maintenance of drainage system** The proposed drainage system should be regularly cleaned and maintained to ensure their function. This is set out on more detail in Appendix 8.1 FRA and Outline Drainage Strategy. Examples include: - removing debris, silt accumulation and leaves to avoid blockages - removal or control of tree roots were encroaching on infrastructure - replace damaged or failed pipes/gullies/manholes. - Inspect permeable paving for weed growth.
Land Drains	If adverse effects are seen (e.g., pooling at the surface or damp, boggy patches), the Applicant will follow a stepwise approach to investigate, and a range of mitigation measures would depend on what was found. New land drains and other drainage features can be installed under and around the piling for the solar panels

Potential Impact	Mitigation Measures and monitoring requirements
	and buried cables to address any issues identified from land drains found to have been damaged during construction. The exact locations of piles and buried cables installed by the Applicant would be known and recorded, and these features can therefore be avoided by careful design and installation of the new drainage. Throughout the operational period, drainage on-site will be monitored, and drainage measures altered or improved as necessary.

4.3 Ecology

4.3.1 An Outline Landscape and Ecology Management Plan (LEMP) has been prepared to manage the areas of landscaping to maximise the benefits for biodiversity, and the monitoring requirements to ensure the successful establishment of the proposed planning. All operational activities will be managed in accordance with the following requirements.

Potential Impact	Mitigation measure and monitoring requirements
Disturbance to wildlife and habitats surrounding the Site. Disturbance to Designated sites within the Site. Disturbance to wildlife from artificial lighting.	The Outline LEMP at Appendix 5.6 of the ES includes detailed information on the management of habitats and vegetation on Site to ensure management is undertaken at an appropriate time of year to avoid unnecessary disturbance or incidental injuring to species. Avoidance of, or any work subject to survey within, the nesting bird period i.e. March to August (inclusive) for any management activities within vegetated areas. Any management of vegetated areas, or works that could cause disturbance to nesting birds within the nesting bird period, should be subject to checks for the presence of any nests by a suitably qualified ornithologist, prior to such works in line with legislative requirements. Dependent upon the management activities, if active nests are found, dependent upon the bird species and status of the nesting attempt, then appropriate buffer zones will need to be imposed. Advice will be sought from an appropriately qualified ornithologist and the area monitored until the young birds have fledged.

	Reasonable avoidance measures for any management activities that have the potential to cause disturbance to badger setts or roosting bats, including appropriate buffers, up to 30 m, around any Badger setts, or 15 m around trees with bat roost potential. Advice should be sought from an appropriately qualified ecologist. To avoid disturbance from lighting, there will be no operational lighting other than downward facing security and safety lighting at access points and on the main operational area in the centre of the Site. This lighting will only be active during times of unplanned maintenance or emergency, and will be motion-sensitive so it remains off unless needed. As an anti-theft measure, there will be alarm lights on all transformer stations that are only activated in case of theft. If the lights become activated, blue or yellow (depending on selected model) flashes will illuminate.

4.4 Landscape and Visual Amenity

4.4.1 The Outline LEMP sets out the measures proposed to mitigate potential visual impacts.

4.4.2 A detailed LEMP will be prepared in accordance with the principles of the Outline LEMP and will include measures to ensure landscape mitigation and enhancements are established and maintained into and throughout the operational phase.

Potential Impact	Mitigation measure and monitoring requirements
Visual effects on local residents, users of local roads.	No operational lighting other than downward facing security and safety lighting at access points and on the main operational area in the centre of the Site. This lighting will only be active during times of unplanned maintenance or emergency, and will be motion-sensitive so it remains off unless needed. As an anti-theft measure, there will be alarm lights on all transformer stations that are only activated in case of theft. If the lights become activated, blue or yellow (depending on selected model) flashes will illuminate. Existing vegetation and new vegetation delivered through the LEMP will be managed to ensure its continued presence and to aid the screening of low-level views into the Order limits.

4.5 Noise

4.5.1 The operational noise will be managed in accordance with the following requirements.

4.5.2 The Operational Noise Assessment will contain details of how the design of the Proposed Development has incorporated mitigation to ensure the operational noise rating levels, as set out in the ES, are to be complied with. For avoidance of doubt, the operational noise rating levels for daytime and night-time are set out below.

Assessment of worst-case operational daytime noise levels

Receptor	Background noise level (dB L_{A90})	Predicted specific level L_s[32] (dB $L_{Aeq,\ 1\ hour}$)	BS 4142 rating level, L_{Ar}[33] (dB $L_{Aeq,\ 1\ hour}$)
Fairfield Farm	33	30	33
Old Barn Farm	33	25	28
Corner Farm	33	32	35
The Old Byre	33	32	36
Walton Hill Farm	34	35	38
Rosliston	34	33	36
Twin Oaks House	41	36	39
Boroughfields Cottage	41	32	35
Ladsgrave Cottage	33	35	38

* As predicted rating level is below the absolute threshold (of 40dB L_{Aeq}) set out in **Table 11.11** of the ES.

Assessment of worst-case operational night-time noise levels

Receptor	Background noise level (dB L_{A90})	Predicted specific level, L_s[32] (dB $L_{Aeq, 1\ hour}$)	BS 4142 rating level L_{Ar}[33] (dB $L_{Aeq, 1\ hour}$)
Fairfield Farm	26	29	32
Old Barn Farm	29	25	29
Corner Farm	29	33	36
The Old Byre	29	31	34
Walton Hill Farm	26	30	34
Rosliston	30	26	29
Twin Oaks House	36	30	34
Boroughfields Cottage	35	28	32
Ladsgrave Cottage	25	28	31

* As predicted rating level is below the absolute threshold (of 40dB L_{Aeq}) set out in **Table 11.11** of the ES.

Potential Impact	Mitigation measure and monitoring requirements
Noise and vibration From operational equipment	The design specification of any operational plant will consider noise emissions in their selection). Plant has been selected to provide oversizing and redundancy to ensure equipment is operating below maximum capacity where highest noise levels typically occur. A stand-off distance of at least 100 m is currently proposed between solar plant and residential properties. The proposed location of equipment is set out within the Work Plans (See ES Appendix 1.3: Work Plans) however the exact location and specification of operational equipment will be determined when finalising the design specification. The design specification of any operational plant will consider noise emissions in their selection; the quietest plant will be selected where other non-acoustic design considerations allow (subject to available acoustic data).

	The use of enclosures, local screening, mufflers, and silencers will also be considered where appropriate. Should the noise exhibit any such acoustic features then the relevant penalty/ correction should be applied in accordance with BS 4142. Plant such as the substation and batteries will be designed to have minimal tonal, impulsive or intermittent features. The Applicant will be required to undertake and submit an Operational Noise Assessment to the local planning authority prior to the start of works on site (DCO Requirement 15). There would not be any materially new, or materially more adverse, environmental effects compared to those identified in the ES. The Site manager will be responsible for management of operational noise. Contact details for the Site manager shall be provided to nearby residents. Should a noise complaint be received, the Site manager will review and initially investigate if any maintenance or reasonably practical action can be undertaken to rectify the source of the complaint and ensure that it is undertaken in a reasonable timeframe. If the Site manager cannot determine appropriate action to take, and it is considered that there may be a valid complaint and/or the complaint continues, a competent noise practitioner (a member of the Institute of Acoustics) shall be engaged at the earliest opportunity (and within 28 days) to investigate the complaint, including any measurements or monitoring, to determine if any agreed noise limits are being exceeded and provide an independent view as to whether any practicable steps should be undertaken to reduce the noise. Any complaints and action taken shall be recorded in a register, with details of any remedials action taken, and progress reported back directly to the complainant. Where operational equipment is observed to be significantly noisier than expected during routine site inspections, this will be also be recorded in the register and action undertaken within a reasonable timeframe to reduce the noise, which is proportionate to the likelihood of the noise disturbing neighbours.

4.6 Ground Conditions

4.6.1 The design of the Proposed Development has included measures to avoid and minimise the risk of pollution to the ground and water during its operation.

4.6.2 An extended period of time under grass is expected to result in a benefit to soil health, specifically soil organic matter, across the solar PV areas. The detailed OEMP will set out a programme of soil health monitoring to be undertaken throughout the operation of the Proposed Development, to rectify any significant adverse impacts on soil health. Soil will be sampled every five years by suitably qualified personnel. Restoration of the site should also seek to ensure that soils are restored back to their current health (including the percentage of organic matter, pH, nutrient status and general soil structure) as recorded in the soil health survey completed as part of the CEMP. This should be included as part of the ongoing soil health management undertaken during the lifetime of the development. See outline Soil Management Plan provided as Appendix 1.

~~4.6.2~~4.6.3

Potential Impact	Mitigation measure and monitoring requirements
Potential for pollutants to enter the ground.	Regular inspections and maintenance of all equipment will be undertaken in order to identify any leaks or damage early. Any panels which require maintenance / replacement will be removed before there is any leakage of chemicals from the sealed units. Any leaks will be dealt with in a way that is compliant with the prevailing environmental legislation. The detailed OEMP(s) will include a regular schedule for visual inspection of the panels and all other solar; During the operational phase there would be surface water runoff from the permanent structures, roofs, solar PV panels and access roads. An outline drainage strategy (Appendix 8.1 of the ES) has been prepared which considers water quality. A minimum buffer of 8m around all watercourses (measured from the water/channel edge under normal flows) has been included in the Design Principles; and Inverters and transformers will be installed on concrete bases with suitable bunding where appropriate.

4.7 Recreation & Access

4.7.1 Once operational, the Proposed Development will not impact the ability of the public to access the PRoW. Any permanent gates which provide access into the Proposed Development will be kept locked and used by authorised personnel only.

4.7.2 The Cross Britain Way (a Public Right of Way) will remain open to the public during the operational phase. A new Permissive Path will provide North-South links across the Site. The new permissive path (for walking only) will only be usable by members of the public once construction on the Site is complete, to avoid the potential for conflicts between construction activities and users on the new path.

4.7.3 Planting identified in the LEMP will help to mitigate visual impacts for road users and users of the PRoW and permissive path network.

4.7.4 The Proposed Development will provide a valuable educational resource for the local area and schools. The detail of such resources will be agreed with the Local Planning Authority when the OEMP is discharged. Educational resources will be maintained throughout the operational stage of the Proposed Development.

Potential Impact	Mitigation measure and monitoring requirements
Impacts to the public using Public Rights of Way. Visual Impacts for road and PRoW users.	Maintaining access to all existing PRoW within the Order limits, with no diversions or closures. Providing a permissive path within the Site to improve connections and desire lines for users. Where the internal maintenance route crosses the existing PRoW network and permissive path or local access roads (such as by providing gates), permitting only operational traffic to utilise these internal routes within the Order limits. Operational traffic should give-way to other users (pedestrians and road users) when utilising the crossing points. Visibility will be maximised between operational vehicles and other users, with warning signage provided if required.

4.8 Waste

4.8.1 Materials requiring removal from the Order limits during operation would be transported using licensed carriers and records kept, detailing the types and quantities of waste moved and the destinations of this waste, in accordance with the relevant regulations.

4.8.2 A Site Waste Management Plan will be developed for the operational phase to ensure the waste hierarchy is followed with waste reduction and reuse/recycling prioritised over landfill.

4.9 Climate Change

4.9.1 Climate Change related activities will be managed in accordance with the following requirements.

Potential Impact	Mitigation measure and monitoring requirements
Greenhouse gas emissions from the operational maintenance activities required during operation of Scheme. Increased ambient temperature due to climate change.	Regular planned maintenance of the Scheme will be conducted to optimise efficiency of the Scheme infrastructure. Increasing recyclability by segregating waste to be re-used and recycled where reasonably practicable; Operating 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 materials with a higher recycled content; Encouraging the use of lower carbon modes of transport by identifying and communicating local bus connections and pedestrian and cycle access routes to/from the Scheme to all staff, and providing appropriate facilities for the safe storage of cycles; Liaising with operational personnel for potential to implement staff minibuses and car sharing options; Switching off vehicles and plant when not in use and ensuring vehicles conform to current EU emissions standards; and Conducting regular planned maintenance of the Scheme to optimise efficiency.

4.10 Telecommunications

4.10.1 Telecommunication links will be managed in accordance with the following requirements.

Potential Impact	Mitigation measure and monitoring requirements
Interference with telecoms links.	If, during operation of the Proposed Development, Airwave identifies degradation of the performance of the link, mitigation options will be available. These could include: Increasing the heights of the dishes on either link end so that the link path is vertically further from the solar panels; Re-networking where an extra node (link end) is added to the link so that the path is taken away from the solar farm; and Increasing the link frequency, which could be less susceptible to interference.

4.11 Light

4.11.1 Operational light will be managed in accordance with the following requirements.

Potential Impact	Mitigation measure and monitoring requirements
Disturbance from artificial lighting.	No operational lighting is being proposed other than downward facing security and safety lighting at access points and on the main operational area in the centre of the Site. This lighting will only be active during times of unplanned maintenance or emergency, and will be motion-sensitive so it remains off unless needed. As an anti-theft measure, there will be alarm lights on all transformer stations that are only activated in case of theft.

5. Implementation of the OEMP

5.1 Structure, Roles and Responsibility

5.1.1 Roles and Responsibilities

5.1.2 All staff will be made aware of the manner in which the site is to be operated and managed, to ensure compliance with the OEMP. A summary of the authorities and environmental responsibilities of key personnel for the operation of the proposed development is outlined below:

5.1.2.1 Environmental Officer or Site nominee

- Undertake and/or co-ordinate environmental monitoring requirements specified within the OEMP;
- Ensure that environmental records and files are maintained;
- Ensure that environmental non-conformances are recorded and actioned;
- Review and updates the OEMP and associated documentation, as required; and
- Collate and maintain records of complaints and respond accordingly.

5.1.2.2 Subcontractors

- Comply with all legal and contractual requirements;
- Comply with management / supervisory directions; and
- Participate in induction and training as directed.

5.1.2.3 All Personnel

- Comply with the relevant Acts, Regulations and Standards;
- Comply with Applicant policies and procedures;
- Promptly report any non-conformances and/or environmental incidents to management; and
- Undergo induction and training in environmental awareness as required.

5.2 Training

5.2.1 All employees and subcontractors (as necessary) will receive suitable environmental training, to ensure they are aware of their responsibilities and are competent to carry out their work. Training will be provided during site inductions and on an ongoing basis as required. All inductions and ongoing training shall be recorded. Training will include the following areas:

- BayWa environmental and sustainability policy;
- OEMP and related documents;
- Significant risks, environmental aspects, impacts and controls;

- Emergency procedure and response; and
- Understanding legal obligations.

5.3 Communication and Consultation

5.3.1 The Applicant is committed to meaningful stakeholder engagement and will work in collaboration with relevant consultees and the local community to resolve any issues that impact local environmental amenity as a result of operation of the proposed development.

5.3.2 Government Bodies

5.3.3 The following government agencies will be consulted with in relation to the operations of the proposed development and the requirements of this OEMP:

- Environment Agency
- Fire Brigade; and,
- LAs EHOs.

5.3.4 Community

5.3.5 The Applicant will ensure that the local community is kept informed of the progress of the project in a pro-active and responsive manner. This will be by way of communications to local parish councils, local newsletters, leaflets, newspaper advertisements, and community notice boards to include information such as:

- Operating hours;
- Contact details (telephone number);
- Any major proposed works which may impact the community.

5.3.6 Complaints Handling

5.3.7 Close liaison will be maintained between residences near the Site to provide effective feedback in regard to perceived problems.

5.3.8 A community telephone line and or email contact will be used to receive public feedback, including complaints.

5.3.9 Complaints or adverse reports received from any external source will be recorded and the Site Manager and/or Environmental Officer will be notified for response. Records of all complaints will be kept for at least four years after the complaint was made.

5.3.10 All received public complaints (either written or verbal) will be documented to record the:

- Nature and extent of the complaint;
- Method by which the complaint was made;
- Name and address of the person lodging the complaint;

- Details of all related factors including location, dates, frequency, duration, site conditions and effects of the complaint; and
- Action taken to address the complaint including follow up contact with the complainant.

5.3.11 The Site Manager and/or Environmental Officer will record the details of all complaints received in an up-to-date log-book to ensure that a response is provided to the complainant within 24 hours or as soon as practicable.

5.3.12 The Site Manager, or their nominee, shall investigate and determine appropriate corrective/preventive actions to be taken to address all complaints. The complainant will be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken the reasons why are to be recorded.

5.3.13 Corrective actions might be required to involve supplementary monitoring to identify the source of the non-conformance, and/or might be required to involve modification of operational techniques to avoid any recurrence or minimise its adverse effects.

5.4 Incident and Emergency Response

5.4.1 A key objective of this OEMP is to identify potential risks, and to develop, and maintain measures to manage them.

5.4.2 The Applicant's approach to incident and emergency response management includes:

- Risk Analysis - The identification of hazards and risks that could impact the community, environmental and operational implications.
- Prevention – The planning and documentation of prevention and mitigation activities for all major hazards, and allocation of responsibility for their implementation.
- Preparedness - The development, implementation and review of specific incident management plans and processes to manage identified risks, the training of staff, and establishment of facilities to ensure the company can respond effectively to an incident.
- Response - The issue of warnings and establishment of processes for effective notification of incidents, and mobilisation of resources to combat the incident or threat.
- Recovery - The return to normal operations, management of debriefs, and implementation of lessons learnt from the response process.

5.4.3 The following priorities will be adopted when dealing with an incident / crisis:

- Protection of human life and welfare;
- Protection of the environment; and

- Protection of the Applicant s assets.

5.4.4 Potential threats to the environment or public health that may arise in relation to the operation of the Site:

- power or other utility failure;
- fire;
- natural disaster;
- surface water contamination, and;
- traffic accident.

5.4.5 Emergency Response Management

5.4.6 An Emergency Response Plan would be completed by the Principal Contractor prior to construction commencing prior to operations commencing the Applicant (owner/operator) would produce an Operational Emergency Response Plan.

5.4.7 To comply with requirements in National Planning Practice Guidance Renewable and low carbon energy and guidance from the National Fire Chiefs Council, an Emergency Response Plan and a Fire Service Site Specific Risk Assessment will be produced for the Site. This will be secured through the OEMP, the implementation of which is secured via a Requirement to the DCO. The Emergency Response Plan will include contact details for emergency services and other key responders; identify a Suitably Authorised Person to isolate the batteries before any firefighting can begin; indicate escape routes and the location of firefighting equipment on site; and will include a firefighting strategy. Derbyshire Fire and Rescue will be consulted on the final Emergency Response Plan prior to construction commencing.

6. Monitoring and Review of the OEMP

6.1 Monitoring and Reporting

6.1.1 Regular environmental inspections will be undertaken to ensure that environmental controls have been implemented, meet specification, and are being maintained in accordance with the current legislations as summarised in Table 5.1 below.

Table 5.1 SSC Environmental Testing and Inspection schedule

Action	Type	Frequency
External visual inspection	A full visual review of the outside of the unit housing the inverter and/or transformer must be completed. The review must include the walls, roof, paintwork and any platforms and needs to identify any visual	Monthly

Action	Type	Frequency
	defects, damage, discolouration and corrosion. Any defects sighted need to be remedied immediately and the affected area returned to its 'as new' state and finished with manufacturer approved paint.	
Inverter, Transformer and Switchgear Housing	The oil tray must be checked for any signs of damage, corrosion, leakage, dirt or water. Dirt must be cleared if possible. Water must be removed when above emptying valve	Monthly
Transformers	An overall visual inspection of the transformer unit must be completed. The inspection must look for any damage, leakages or rust and checking for anomalous noises, smells or discolouration including the full body of the transformer and all joints and seals. The oil level, oil temperature and winding temperature must also be checked and recorded where accessible. Leaks must be reported to the owner's representative and remedied as soon as practicable. Any damage or rust must be assessed for severity and reported to the owner's representative. If considered minor the defect must be monitored monthly and remedied during annual servicing. The anti-vibration pads supporting the transformer must be inspected visually for wear or damage.	Monthly

Action	Type	Frequency
Site Access, fencing and drainage	The complete track network of the site is to be visually inspected for damage or flooding/sitting water. Potholes are to be made good. Any issues sighted must be reported to the owner's representative along with a practical plan for remedy.	Quarterly
Site Access, fencing and drainage	The full perimeter fence must be visually inspected along with any internal fences and all gates. The inspection will look for any damage, corrosion/rot, movement or tilting of the fencing, fence posts, bracings and gates. The gates will be confirmed as securely attached with hinges in working order, free of corrosion, lubricated and running smoothly. Gate locks and drop bolts must be functional and secure. Signage along the perimeter fence warning of electrical danger and CCTV operation must be in place and clearly visible at all approaches to the site. Fallen or missing signs must be replaced. The site identification and contact sign must be in place at the sites entrance and legible. Q 03.	Quarterly
Site drainage	Site drainage mechanisms and SUDS to be maintained in line with the flood risk assessment a landscaping plan approved by the Local Planning Authority. During routine inspection all swales, ditches, drains and culverts are to be confirmed as free from debris and	Quarterly

Action	Type	Frequency
	obstruction. Any blockages are to be cleared immediately. The legs of the solar panel mounts will be inspected for the build up of debris which, if found, will be removed.	
Land Management status	General check of the conditions on site twice a year.	Twice a year
Weed Management	Vegetation will be removed below panel tables in line with stipulations of the site specific LEMP.	X
Hedge and tree maintenance	Trees to be managed to ensure no shading of the PV Plant. Any pruning will take place in January-February each year. Trees to be pruned in accordance with site specific LEMP. Additional watering (beyond rainfall) will be provided where it becomes evident that plants are beginning to suffer from water stress. Any hedgerow plants that fail shall be replaced with similar sized plants of the same species.	X

6.1.2 At completion of each inspection, any corrective actions required will be recorded and managed in a timely manner (Table 5.2).

Table 5.2 Correction Action Timetable

Priority	Action	Timeframe
Low	May not require immediate action. Monitor situation and schedule control action	Action typically required within 15 to 29 days
Medium	Control actions as soon as possible	Action typically required within 7 to 14 days

High	Significant and immediate control	Action typically required within 1-7 days

6.1.3 Compliance with all environmental regulatory criteria is a priority for the Applicant. Specific compliance obligations will be detailed and controlled in the supporting Environmental Management Plans. Environmental non-compliances will be managed on a case-by case basis depending on the severity of the incident as described in the Table 5.3 below.

Table 5.3

Incident Classification	Investigation Team or Person	If the incident involves an injury
1. Insignificant 2. Minor 3. Moderate	A suitable competent person from the organisational unit or functional area where the incident occurred.	An Injury/ Occupational Illness Report form must also be completed by the relevant Line Manager using the short investigation form completed in the file register
4. Major 5. Catastrophic (Crisis)	Appropriately independent qualified person appointed as a single Lead Investigator	Long investigation form to be completed in the file register for any injuries/occupational illness

6.1.4 Environmental Audits

6.1.5 Audits will be undertaken on a regular basis to ensure that the Applicant meets compliance objectives, as well as to support continuous improvement. The audits will:

- assess the effectiveness of the OEMP in meeting operational policies and legislative and industry standards;
- determine whether the measures and/or corrective actions carried out conform to the objectives of the OEMP;

- assess the adequacy of implemented controls to minimise high risk environmental issues or operational activities; and
- identify areas for continuous improvement.

6.1.6 Audit reports will be maintained to enable non-conformances and opportunities for improvement identified to be recorded, reported and responded to.

6.2 Management Review

6.2.1 Management reviews of the OEMP will be scheduled annually to assess the continuing suitability, adequacy and effectiveness of the measures implemented.

6.2.2 The inputs to the management review process shall include (but not be limited to):

- audit findings; and
- incident management and investigation of non-conformance events, incidents, near misses and management of all complaints received.

6.2.3 The output from the management review shall include any decisions and actions related to:

- possible changes to the management plans, procedures, practices, objectives and targets associated with the environmental management of the proposed development;
- improvement of the effectiveness of the management system and its processes; and
- resource needs.

6.3 Environmental Monitoring Program

6.3.1 The implementation of monitoring requirements will be the responsibility of the Site Manager or nominee.

6.3.2 Relevant monitoring requirements will be established on revision of the OOEMP and included as Appendix.

6.3.3 All sampling strategies and protocols undertaken as part of the monitoring program will be conducted in line with industry best practices. Monitoring will be performed by the Environmental Manager or other relevant party in accordance with the requirements set out in this OEMP and supporting EMPs.

6.3.4 Where monitoring and measuring devices are used, these will be calibrated in accordance with the manufacturer's recommendations. Records of calibration will be maintained, and the calibration status of the device will be clearly communicated.

Appendix 1 –Soil Management Plan

1. Introduction

1.1.1 This outline~~e~~ Soil Management Plan (OSMP) sets out principles and procedures for good practice for maintaining soil health during the operational phases of the development. This outline plan describes the principles that will be followed to minimise adverse effects on the health of the soils within the site. The full detailed SMP shall be produced and agreed with South Derbyshire District Council to discharge Requirement 11.

1.1.2 ~~-~~The OSMP is based upon guidance such as the Department for Environment, Food and Rural Affairs (Defra's) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, and the Institute of Quarrying (2021) Good Practice Guide for Handling Soils in Mineral Workings.

1.1.3 The OSMP is a 'live document' to be updated as further information becomes available.

1.1.4 The Site has been the subject of two detailed Agricultural Land Classification (ALC) surveys, undertaken by suitably qualified surveyors and assessors (Oaklands Solar Farm, Soil Environment Services Ltd, August 2024, Land At Park Farm ALC Survey, Kernon Countryside Consultants, October 2024).A further Soil Health Survey is to be completed as part of the final CEMP approved as part of Requirement 9 of the DCO and shall also form part of the baseline for monitoring soil health during the operational phases.

~~6.3.5~~1.1.5 This document assumes that all measures set out in the SMP that forms part of the Construction Environmental Management Plan (CEMP) will be fully implemented and completed as set out therein.

1.1.6 Following decommissioning, all soils will be restored to their pre-construction ALC grade. The Applicant is committed to sensitively storing the topsoil removed from these areas during the lifetime of the development to maximise the chances of successful reinstatement.

~~6.3.6~~1.1.7 During the 40 year operational stage of the development soils will either be a) returned to their existing agricultural use (areas containing the construction haul road, and grid connection route between the solar farm and Drakelow Power Station b) used for hosting solar panels with wildflower meadows or landscaping c) be stored in bunds and stock piles for elements where its removal was required for construction (access tracks, BESS, substation).

1.1.8 For a) the operational phase is not expected to have any effect on soil health or ALC grade. For b), an extended period of time under grass is expected to result in a benefit to soil health, specifically soil organic matter, across the solar PV areas. For c) soil stored in bunds has the highest risk of deterioration if not correctly

monitored and maintained. Ongoing maintenance and monitoring is required in this regard.

1.1.9 There should be no soil excavation or handling during the 40 operational phases of the development except where required for any remedial activities as advised by the Soil Adviser.

Roles and responsibilities

The Applicant

1.1.10 The Applicant is responsible for ensuring that operational activities do not lead to a deterioration in the health or ALC grading of soils within the site as recorded in Oaklands Solar Farm, Soil Environment Services Ltd, August 2024, Land At Park Farm ALC Survey, Kernon Countryside Consultants, October 2024) and the Soil Health Survey completed as part of the final CEMP approved as part of Requirement 9 of the DCO.

1.1.11 The Applicant is responsible for ensuring that soil health surveys are undertaken by suitable qualified experts every five years during the 40 year lifetime of the development and where clear indication of a deterioration is identified remedial action is undertaken to stop and reverse it.

Soil Advisor

1.1.12 The Applicant will commission soil advisers to undertake the necessary soil health surveys. The soil advisor needs to be a suitably qualified and an experienced soils surveyor.

Soil monitoring

~~6.3.7~~ The detailed OEMP will set out a programme of soil health monitoring to be undertaken throughout the operation of the Proposed Development, to rectify any significant adverse impacts on soil health. Soil will be sampled every five years by suitably qualified personnel. Soil health parameters should include the percentage of organic matter, pH, nutrient status and general soil structure.

Stockpile Maintenance

~~6.3.8~~1.1.13 As set out in the CEMP stockpiles will have been seeded with appropriate low maintenance grass/clover mixture to protect the soil against erosion, minimise soil nutrient loss, and maintain soil biological activity. Appropriate seeding will also help prevent colonisation of the stockpile by nuisance weeds.

~~6.3.9~~1.1.14 In the period where vegetative cover on the stockpiles is establishing, where required during dry weather, the stockpiles will be sprayed with water to prevent wind erosion (generation of dust) and to ensure that the seeds establish.

~~6.3.10~~1.1.15 The stockpile vegetation cover is to be managed (by spraying, mowing or stripping as appropriate) to remove weeds, scrub and saplings that may lead to vegetation damage.

~~6.3.11~~1.1.16 The condition of the stockpiles is to be regularly monitored. If rainwater gathers on the stockpile surface or in areas directly adjacent to them, suitable drainage should be installed in consultation with a drainage expert. Stockpiles should not be allowed to become waterlogged. A monitoring log is to be provided in the final operational SMP and records of monitoring kept by The Applicant throughout the 40 years operation of the development.

Good ~~P~~practice ~~M~~itigation Measures during the operational phase

1.1.17 General principles

- There should be no soil excavation or handling during the 40 operational phases of the development except where required for any remedial activities as advised by the Soil Adviser.
- No vehicle movements outside of type 1 tracks provided within the solar farm shall be permitted during the months October to March inclusive for maintenance or other works during unless absolutely necessary. Such activities shall be planned for and undertaken in dry weather only and at least 48 hours after a rainfall event.
- At all other times of year, soil shall not be trafficked over/driven on immediately after heavy rainfall or in a waterlogged condition, or when there are standing pools of water on the soil surface.
- A log of all surveys, soil adviser advice and remedial activities shall be kept for the full 40 years operational period.

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