



Longfield Solar Farm

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Decommissioning Strategy

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Longfield Solar Energy Farm Ltd

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Table of Contents

1.	Introduction.....	2
1.1	Introduction	2
1.2	Decommissioning Environmental Management Plan	2
2.	Principles of Decommissioning and Environmental Considerations	3
2.1	Decommissioning Activities.....	3
2.2	Decommissioning Programme.....	4
3.	Environmental Mitigation and Management.....	4
3.2	Responding to Environmental Incidents and Emergencies	8
3.3	Good Practice	8
4.	Implementation and Operation.....	8
5.	Monitoring and Reporting.....	8

1. Introduction

1.1 Introduction

- 1.1.1 Longfield Solar Energy Farm Ltd (hereafter referred to as the 'Applicant') has prepared this Decommissioning Strategy as part of an application for a Development Consent Order (DCO) for the construction, operation and maintenance, and decommissioning of the Longfield Solar Farm (hereafter referred to as the 'Scheme').
- 1.1.2 Decommissioning comprises the process of removing all solar PV array infrastructure including modules, mounting structures, cabling inverters and transformers, for recycling or disposal in accordance with good practice and market conditions at that time.
- 1.1.3 Upon decommissioning, the above-ground physical infrastructure at the Solar Farm Site will be removed and the Solar Farm Site returned to the landowner. This will include the areas of agricultural land where the agricultural resource has been maintained (and potentially improved) during operation, and the established habitats. Post-decommissioning, the landowner may return the Solar Farm Site to arable use, although it is assumed that established habitats such as hedgerows and woodland would be retained
- 1.1.4 The Bulls Lodge Substation Extension will be retained and will remain in National Grid Electricity Transmission (NGET) control.
- 1.1.5 These works will be undertaken according to legislation, regulations, and best practice that are current at the time of decommissioning.

1.2 Decommissioning Environmental Management Plan

- 1.2.1 A Decommissioning Environmental Management Plan (DEMP) (or multiple DEMPs) and Decommissioning Traffic Management Plan (DTMP) will be produced and approved for the Scheme following the appointment of a contractor, prior to the start of the decommissioning phase of the Scheme. This is secured by a Requirement of the DCO. A DEMP and DTMP will not be required for Bulls Lodge Substation Extension, which will not undergo decommissioning as part of the Scheme.
- 1.2.2 The nature of the decommissioning activities and potential for likely significant effects would be similar to construction. The DEMPs and DTMP will therefore include similar measures to those included in the Outline Construction Environmental Management Plan (CEMP) [EN010118/APP/7.10] and the detailed CEMPs, as well as the Framework Construction Traffic Management Plan (CTMP) [EN010118/APP/6.2] submitted with the Application, covering issues such as transportation methods, pollution prevention, and noise management.
- 1.2.3 The DEMP(s) will adhere with regulations and guidance at the time, but is expected to include:

- a. An overview of the Scheme, decommissioning activities and programme;
 - b. Prior assessment of potential environmental impacts;
 - c. Mitigation measures to prevent or reduce potential adverse impacts;
 - d. Monitoring of effectiveness of mitigation measures; and
 - e. Links to other complementary plans and procedures.
- 1.2.4 The appointed Contractor(s) will be responsible for preparing and working in accordance with the environmental controls documented in the DEMP(s). The overall responsibility for implementation of each DEMP will lie with the appointed Contractor.

2. Principles of Decommissioning and Environmental Considerations

2.1 Decommissioning Activities

- 2.1.1 The land within the Solar Farm Site will be returned to the landowner and to its original use after decommissioning. All above ground infrastructure will be removed, with the exception of the Bulls Lodge Substation Extension, which will remain in NGET's control.
- 2.1.2 Foundations and other below ground infrastructure, which are not practicable to remove, will be cut to 1m below the surface to enable future ploughing. Any piles would be removed.
- 2.1.3 The 400kV cables may be left in situ, depending on the method which is likely to have the least environmental impact at the time. If the cables are removed this would be achieved by pulling the cables out of the ducts and the subsequent removal of the ducts themselves, limiting the locations where the surface would need to be disturbed. This same principle will apply to the other high voltage and low voltage cabling throughout the Order limits to be removed. Any cabling removed will be taken to an appropriate facility for recycling.
- 2.1.4 Excavations will be backfilled, using appropriate imported soil if required, otherwise with soil sourced on site, using appropriate soil management techniques. Some soil profiling may be required, and the land will be contoured.
- 2.1.5 To restore the land to its pre-construction condition at the end of operation, the soil resource within the Order limits will need to be managed throughout construction, operation and decommissioning. An Outline Soil Resource Management Plan (SRMP) is included in the DCO application appended to the OCEMP [EN010118/APP/7.10], and identifies measures to be implemented to:
 - a. ensure the protection and conservation of soil resources;
 - b. maintain the physical properties of the soils through best practice; and

- c. provide on-site reference on the management of the soil resource for site operators undertaking the works
- 2.1.6 An Agricultural Land Classification Survey (reported in **Appendix 12A** of the **Environmental Statement [EN010118/APP/6.2]**) was undertaken as part of the Application and will form the basis of how the land will be left at the end of the operational phase. The soil will have undergone approximately 40 years of recovery through less intensive farming, such as being left fallow or used for sheep grazing, and is therefore expected to be of the same or better quality as it is at present.
- 2.1.7 Where localised soil compaction occurs from the presence of structures or the weight of mobile machinery used through operation and decommissioning, management measures are identified to alleviate compaction (e.g. through ploughing), to maintain soil structure and enable reinstatement of the land (including best and most versatile land) to its original use and ALC grade.
- 2.1.8 Some primary access tracks will be retained as requested by the landowner. However, permissive paths will be removed during decommissioning, with the precise timing to be determined by the contractor(s) and communicated to the relevant local authority.

2.2 Decommissioning Programme

- 2.2.1 Decommissioning is expected to take between 12 and 24 months and will be undertaken in phases.
- 2.2.2 The Scheme is assessed in the Environmental Statement **[EN010118/APP/6.1]** as being decommissioned after approximately 40 years of operation, with decommissioning assumed to be not earlier than 2066.
- 2.2.3 More details on the decommissioning phasing will be provided within the DEMP(s) in consultation with the local planning authorities, prior to decommissioning commencing.

3. Environmental Mitigation and Management

- 3.1.1 A summary of potential mitigation and management measures during to decommissioning is provided in **Table 1**. The nature of the decommissioning activities and potential for likely significant effects would be similar to construction, and therefore the DEMP(s)/DTMP will include similar measures to those included in the CEMP(s) and CTMP **[EN010118/APP/6.2]**.

Table 1: Decommissioning Mitigation and Management Measures

<i>Mitigation and Management Measure</i>	<i>Effect</i>
Climate Change Standards of good practice for climate change will be followed to minimise greenhouse gas emissions from activities and vehicles.	Minimise greenhouse gas emissions from activities and vehicles during decommissioning.

<p>Suitable measures will be implemented during decommissioning to manage the greater risk of flooding and extreme weather events due to climate change and ensure safety of staff. An emergency response plan would be prepared and implemented, and a designated flood warden appointed.</p>	<p>Increase resilience to greater flood risk during decommissioning and ensure site personnel are protected.</p>
<p>Ecology</p> <p>Standard management measures will be implemented to prevent pollution incidents, minimise effects on ecology from noise and vibration, prevent and minimise dust creation and air pollution. Precautionary working method statements would be produced, controlled and implemented.</p> <p>Nesting and Breeding Birds</p> <p>Pre- decommissioning surveys for sensitive breeding birds, i.e. those listed on Schedule 1 of the WCA, will be undertaken in advance of decommissioning works commencing to determine the distribution of each of these species and its breeding status.</p> <p>Measures will be implemented in order to mitigate for impacts to nesting and breeding birds. Where reasonably practicable, vegetation clearance works would be undertaken outside the bird breeding season (March-August).</p> <ul style="list-style-type: none"> - An Ecological Clerk of Works (ECoW) will advise on the need for and if required carry out supervision of works during decommissioning. - The Barn Owl boxes installed within the Order limits as part of the Scheme will not be removed as part of the decommissioning works. <p>Reptiles and Amphibians</p> <p>Reasonable avoidance measures would be used during habitat clearance suitable for reptiles, encouraging animals to move away from affected areas to adjacent suitable habitat. Reptile and amphibian hibernacula will be provided within the Order limits in shaded locations within 200m of ponds.</p> <p>Badgers</p> <p>Implementation of an appropriate buffer of up to 30m around a badger sett during decommissioning works.</p> <p>Bats</p> <p>Implementation of an appropriate buffer of 25m around trees with bat roost potential during decommissioning works.</p> <p>Invasive Species</p> <p>Pre-decommissioning surveys will be undertaken to provide an update on the presence and location of any invasive species which will inform the production of a Biosecurity Management Plan. In the event that any future infestations of invasive non-native species are identified prior to any decommissioning works, exclusion zones will be established around them and the Ecological Clerk of Works (ECoW) contacted for advice as required.</p>	<p>To minimise the loss of existing habitats and minimise impact on biodiversity within the Order limits.</p>
<p>Noise and Vibration</p>	

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<p>Standards of good practice for noise and vibration will be followed to minimise noise and vibration impacts from activities and vehicles.</p> <p>Working hours will run from 07:00 to 19:00 Monday to Saturday.</p> <p>A noise monitoring scheme will be developed and agreed with appropriate stakeholders prior to commencement of decommissioning works.</p>	<p>Minimise noise and vibration from activities and vehicles during decommissioning and ensure ensuring levels of noise and vibration do not exceed relevant guidance.</p>
<p>Water</p> <p>Relevant Good Practice Guidance (GPPs) and Pollution Prevention Guidance (PPGs), as well as additional good practice guidance for the water environment including British Standards and key CIRIA documents, will be followed for the water environment and flood risk during decommissioning.</p> <p>Best practice measures will be incorporated for the safe storage of materials, including appropriate containment measures, bunding, drip trays installed as part of plant and machinery used and water suppression will be used to suppress fugitive dust emissions.</p> <p>A water management plan will be developed as part of the DEMP, and will detail management measures including any water quality monitoring to be undertaken.</p> <p>If decommissioning site runoff is treated on site, a Water Discharge Activity Permit will be acquired as necessary.</p>	<p>Minimise the risk of flooding and pollution to waterbodies.</p>
<p>Socio-economic and Land Use</p> <p>A Soil Resource Management Plan (SRMP) will be prepared in accordance with the Outline SRMP setting out measures to manage the reinstatement of any stored soils and minimising soil disturbance and soil compaction when extracting supports for the solar PV panels.</p> <p>It will be particularly important to avoid causing soil compaction during the decommissioning phase. To reduce ground pressure tracked plant and machinery or plant and machinery equipped with low ground pressure tyres should be used in the decommissioning.</p> <p>In areas where soil may need to be reinstated e.g. where buildings are demolished, or tracks taken up guidance in Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (PB13298) or reference appropriate at the time may provide useful guidance.</p>	<p>Protect and conserve soil resources on site and maintain the physical properties of the soils through best practice for reinstatement.</p>
<p>Transport</p> <p>A DTMP will be prepared to manage traffic associated with decommissioning, and will include measures to minimise the impact of construction traffic on surrounding roads, including disruption and risk of traffic accidents along local access roads and along Public Rights of Way (PRoW). Measures will include:</p> <ul style="list-style-type: none"> - Restricting movement of Heavy Goods Vehicles (HGVs) to certain routes and times of day. - A monitoring system and Delivery Management System to record the route of HGVs to and from the Order limits and regulate their arrival times to ensure compliance. - Encouraging alternative travel arrangements for site personnel, including car sharing and shuttle bus services, or 	<p>Minimise the impact of construction traffic on surrounding roads, including disruption and risk of traffic accidents along local access roads and along Public Rights of Way (PRoW).</p>

<p>the use of Chelmer Valley Park and Ride, to reduce the volume of vehicle trips required.</p>	
<p>Air Quality</p> <p>Standards of good practice for air quality, as set out in the Institute of Air Quality Management (IAQM) 'Guidance on the Assessment of Dust from Demolition and Construction', or relevant guidance will be followed during decommissioning to minimise for dust from activities and vehicles.</p> <p>A dust management plan, as part of the DEMP will detail any dust monitoring required prior to and during decommissioning, including any relevant baseline dust monitoring to be undertaken before activities commence.</p>	<p>Minimise dust emissions from activities and vehicles.</p>
<p>Landscape and Visual</p> <p>Tree Protection Measures</p> <p>All works affecting trees should be undertaken in accordance with best practice tree protection measures.</p> <p>Lighting</p> <p>Standard good practice measures will be followed with regards to safe site lighting during decommissioning. For example, motion detection security lighting will be used to avoid the use of permanent lighting therefore reducing light spill to boundary features.</p>	<p>Protect trees and conserve landscape and biodiversity features.</p> <p>Minimise visual impacts</p>
<p>Waste</p> <p>Suitable measures for the sustainable use of resources and waste management will be implemented during decommissioning. The contractor will seek to use material resources efficiently, reduce waste at source, reduce waste that requires final disposal to landfill and apply the principles of the waste hierarchy.</p> <p>Infrastructure such as PV panels and battery storage units will be removed and recycled as far as practical and in accordance with legislation and guidance applicable at the time, or if more suitable at the time, sold for refurbishment and reuse.</p> <p>A Decommissioning Resource Management Plan (DRMP) setting out how measures to manage the disposal of waste from the Order limits, will be prepared in accordance with relevant legislative and policy requirements at the time of decommissioning.</p>	<p>Minimising unnecessary use of resources and waste production during decommissioning.</p>
<p>Ground Conditions</p> <p>Standards of good practice for ground conditions, will be followed during decommissioning to prevent, contain and remediate contamination.</p>	<p>Minimise the risk of contamination decommissioning.</p>
<p>Accidents and Disasters</p> <p>The risk of major accidents and disasters during decommissioning will be addressed through relevant risk assessments and management plans prior to undertaking the works.</p>	<p>Minimising the risk of major accidents and disasters and protecting site personnel.</p>

All works will be undertaken in accordance with relevant Health and Safety legislation and guidance with relevant emergency details publicised and communicated to all site personnel.	
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3.2 Responding to Environmental Incidents and Emergencies

3.2.1 The Contractor(s) will designate an Environmental Manager who will be responsible for the implementation of the DEMP(s). This individual will be notified, as soon as it is safe to do so following an environmental incident and emergency. A reporting procedure will be agreed with the local authorities and any other statutory bodies such as Environment Agency. Staff will be informed of this process and made aware that it is everyone's responsibility to call the emergency services, should this be needed.

3.3 Good Practice

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

4. Implementation and Operation

4.1.1 The DEMP(s) will set out all roles, responsibilities and actions required in respect of implementation of the mitigation measures, including:

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

5. Monitoring and Reporting

5.1.1 Environmental monitoring of the Scheme and its impacts will be undertaken throughout the decommissioning phase. Monitoring requirements will be detailed in the DEMP(s).

- 5.1.2 The Environmental Manager will observe site activities and report any deviations from the DEMP(s) in a logbook, along with the action taken and general conditions at the time. The Applicant will be informed by the contractor(s) of any deviations from the DEMP(s) as soon as possible following identification of such issues. The Environmental Manager would also act as day-to-day contact with relevant local authorities and other regulatory agencies such as the Environment Agency.
- 5.1.3 During decommissioning, the Environmental Manager will conduct regular walkover inspections to ensure all requirements of the DEMP(s) are being met. Action from these surveys will be documented on an Environmental Action Schedule for actioning.