Springwell Solar Farm

Outline Construction Environmental Management Plan

APFP Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

EN010149/APP/7.7
November 2024
Springwell Energyfarm Ltd

Table of Contents

1. The Proposed Development

1.1. Introduction

1.1.1. The Applicant has prepared an Outline Construction Environmental Management Plan (oCEMP) for the construction of Springwell Energy Farm (hereafter referred to as 'the Proposed Development').

1.1.2. Detailed CEMP(s) will be produced for the Proposed Development in accordance with the Requirement in the **Draft Development Consent Order (DCO) [EN010149/APP/3.1]** prior to the commencement of the construction phase. The detailed CEMP(s) will be required to be substantially in accordance with this oCEMP submitted as part of the DCO Application.

1.1.3. The Proposed Development is likely to be constructed in phases or parts, and it is envisaged that the detailed CEMP(s) may be prepared, approved or implemented for individual parts or phases of the Proposed Development. As a result, there could be multiple CEMP(s) prepared in accordance with this oCEMP. Each detailed CEMP will be produced in line with this oCEMP following granting of the DCO and consulted on with Lincolnshire County Council and approved by North Kesteven District Council in advance of the date of commencement for the relevant phase of the Proposed Development.

1.1.4. To ensure the detailed CEMP(s) remain relevant and effective, updates will be undertaken as necessary, to align with the construction works and environmental conditions.

1.1.5. This document does not address measures for the operational or decommissioning phases, which are provided in the separate **Outline Operational Environmental Management Plan (oOEMP) [EN010149/APP/7.10]** and the **Outline Decommissioning Environmental Management Plan (oDEMP) [EN010149/APP/7.13]** respectively.

1.1.6. Likely significant effects have been identified through the Environmental Impact Assessment (EIA) process and are reported in the **Environmental Statement (ES) Volume 1 [EN010149/APP/6.1].** A range of best practice mitigation and construction methodology measures were accounted for in the assessments, and these will be implemented during construction of the Proposed Development. This oCEMP demonstrates how these measures will be implemented. It also sets out the monitoring activities designed to ensure that mitigation measures are carried out, and that they are effective.

1.1.7. The detailed CEMP(s) to be submitted for approval will be prepared following the appointment of a Principal contractor, prior to the start of construction of the Proposed Development.

1.1.8. This oCEMP has been prepared with the objective of compliance with the relevant legislation and mitigation measures identified through the EIA process. Any additional construction licenses, permits or approvals that are required for the construction phase of the Proposed Development, and that are not disapplied by the DCO, will be set out in the detailed CEMP(s), including any environmental information submitted in respect of them.

1.1.9. This oCEMP provides the likely structure of the detailed CEMP(s) and outlines which measures will be included within the detailed CEMP(s) to deliver the construction phase of the Proposed Development.

1.1.10. The appointed Principal contractor will be responsible for working in accordance with the environmental controls documented in any approved detailed CEMP(s). The overall responsibility for implementation of the detailed CEMP(s) will lie with the appointed Principal contractor as a contractual responsibility to the Applicant, as the Applicant is ultimately responsible for compliance with the DCO.

1.1.11. This oCEMP is set out in the context of the other environmental management plans that are submitted with the DCO Application in **Figure 1** below.

Figure 1: Outline management plans

1.1.12. The following additional environmental management plans are secured by this oCEMP and will be prepared as part of the detailed CEMP(s) prior to construction of the Proposed Development:

- Dust Management Plan;

- Emergency Preparedness and Response Plan;
- Site Waste Management Plan;
- Unexploded Ordnance (UXO) Risk Management Plan; and
- Health and Safety Plan.

1.2. The Proposed Development

1.2.1. A summary of the description of the Proposed Development can be found in Section 3.1 of the **ES Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1].** The terminology used in this document is defined in the **ES Volume 1, Chapter 00: Glossary [EN010149/APP/6.1].**

1.3. The Order Limits

1.3.1. The extent of the Order Limits are shown in **Location, Order Limits and Grid Coordinate Plans [EN010149/APP/2.1]** and the Proposed Development is described in full in **ES Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1]** and are secured within **Works Plans [EN010149/APP/2.3]** and Project Parameters provided in **ES Volume 3, Appendix 3.1: Project Parameters [EN010149/APP/6.3].**

2. Construction Environmental Management

2.1. Roles and Responsibilities

2.1.1. The Principal contractor shall make available sufficient time and resource for the effective management of environmental risks that could arise during construction work. This includes appointing adequately qualified personnel with knowledge and capability in the environmental management of construction site works. Persons having responsibility for environmental site management, and in particular any persons required to undertake and oversee response to any incidents with potential environmental consequences, shall be empowered to make decision and take appropriate action necessary to avoid or mitigate adverse environmental effects, even when this may lead to delay and/or additional cost to the Principal contractor.

2.1.2. The Applicant and all appointed contractors will be responsible for ensuring that the potential risks to the environment are adequately avoided or controlled by the application measures as documented within the CEMPs, which shall be complied with throughout construction. The main organisations and persons involved in the construction stage works are set out in **Table 1**. The key role and responsibilities during the construction phase in managing environmental impacts will likely include, but are not limited to:

- **Project Director** – Overall responsibility for legal compliance. Responsible for providing appropriate resources in the team including competent staff and training.
- **Project Manager** – Responsible for the management of the planning and delivery of the project in accordance with the requirements of the CEMP. Collaborating with the environment team to seek advice and facilitate assurance inspectors and implement corrective action.
- **Site Manager** – Overall responsibility for activity onsite and will be based onsite full time.
- **Construction Project Manager** – Responsible for ensuring all elements in the DCO, CEMP(s) and all environmental legal and other requirements are implemented, and appropriately resourced, managed, reviewed and reported.
- **Environment Manager** – Responsible for ensuring environmental legislation and best practices are complied with, and environmental mitigation and monitoring measures identified are implemented. The Environment Manager will oversee environmental monitoring on site and carry out regular environmental site inspections, reporting and responding to any incidents or non-compliance. The Environment

Manager will liaise with relevant environmental bodies and other third parties as appropriate.

- **Health and Safety Manager** – Responsible for the monitoring and controlling of health and safety compliance and related rules and regulations on site.
- **Community Liaison Officer** – A Community Liaison Group will be set up in accordance with the relevant DCO requirement prior to construction and will continue through until final commissioning of the Proposed Development as a formal forum for local issues to be raised. A Community Liaison Officer will be appointed to lead discussions with local communities, and also act as the primary point of contact should there be any queries or complaints.

2.1.3. These roles and responsibilities are indicative and will be confirmed in the detailed CEMP(s).

Table 1 Project roles and environmental responsibilities

Process Task	Role[1]					
	Project Manager / Director	Site Manager	Construction Project Manager	Environmental Manager	Health and Safety Manager	Community Liaison Officer
Developing and maintaining the CEMP	A	C	M	R	C	I
Monitor environmental aspects through review of construction method statement, identify and control issues	-	A	M	R	R	I
Monitoring construction works to ensure any necessary environmental issues and control measures are in place; ensuring they are effectively communicated, appropriate and implemented on site	-	A	M	R	C	I

[1] **RACIM DETAILS –**

R – Responsible: The individual(s) who perform an activity responsible for action/implementation – although usually only one, R's can be shared.

A – Accountable: The individual who is ultimately accountable including yes/no decision and power of veto – only one (A) can be assigned.

C – Consulted: The individual (s) to be consulted prior to a final decision being made or action taken – two-way communication.

I – Informed: The individual (s) who need to be informed after a decision is made or action is taken – one-way communication.

M – Monitor: Monitor the delivery of the proposed development on behalf of third parties and report on compliance

Process Task	Role[1]					
	Project Manager / Director	Site Manager	Construction Project Manager	Environmental Manager	Health and Safety Manager	Community Liaison Officer
Ensuring the work is performed by trained and qualified staff; and providing training where necessary	A	R	C	M	I	I
Ensuring the adequate resources are allocated for environmental management	A	R	M	M	I	I
Ensuring that all relevant environmental documentation and information (including permission, consents, permits and assessments) is communicated	A	R	M	M	C	I
Regular site inspections and maintaining a record of environmental performance, and reporting performance and monitoring environmental performance.	A	C	M	M	R	I
Following good practice and minimising impact on the environment	C	A	M	M	R	I
Understanding project environmental obligations and mitigation measures	I	A	M	M	R	I

Process Task	Role[1]					
	Project Manager / Director	Site Manager	Construction Project Manager	Environmental Manager	Health and Safety Manager	Community Liaison Officer
Liaison with local authority, other statutory bodies, members of the public, press and the media	C	A	M	M	C	R
Supporting all site staff with environmental management including reviewing and commenting on method statements and risk assessments	A	R	M	M	R	-
Ensuring that the environmental policy of the Applicant is delivered	C	A	M	M	R	-
Providing information on waste management/reduction procedures to relevant staff	R	A	M	M	R	-

2.2. Construction Programme

2.2.1. The construction phase is anticipated to be split into two phases over a 48-month construction period, and subject to being granted consent, the earliest construction is anticipated to start is in 2027.

2.2.2. The final programme will depend on the detailed design and potential environmental constraints on the timing of construction activities. The final programme will be included within the CEMP(s).

2.3. Construction Activities

2.3.1. The Proposed Development is described in **ES Volume 1, Chapter 3: Description of the Proposed Development [EN010149/APP/3.1]** and Schedule 1 of the **Draft DCO [EN10149/APP/3.1]** where the "authorised development" is divided into work packages. The work numbers for those packages are identified below and correspond to the **Works Plans [EN010149/APP/2.3].** Note that there is overlap of Work Areas in some locations:

- Work No. 1: Ground-mounted Solar PV Generating Station
- Work No. 2: Springwell Substation Compound
- Work No. 3: Satellite Collector Compounds
- Work No. 4: Battery Energy Storage System Compound
- Work No. 5: Grid Connection Infrastructure
- Work No. 6: Cables
- Work No. 7: Temporary Construction and Decommissioning Compounds
- Work No. 8: Highways Works (Facilitate access)
- Work No. 9: Green Infrastructure

2.3.2. The **Draft DCO [EN010149/APP/3.1]** also allows for the following works to occur in connection with and in addition to the Work Nos. set out above within the Order Limits for those work areas:

- fencing, gates, boundary treatment and other means of enclosure;
- bunds, embankments, trenching and swales;
- works to the existing irrigation system and works to alter the position and extent of such irrigation system;
- surface water drainage systems, storm water attenuation systems including storage basins, oil water separators, including channelling and culverting and works to existing drainage networks;

- electrical, gas, water, foul water drainage and telecommunications infrastructure connections, diversions and works to, and works to alter the position of, such services and utilities connections;
- works to alter the course of, or otherwise interfere with, non-navigable rivers, streams or watercourses;
- works for the provision of security and monitoring measures such as CCTV columns, security cabins, lighting columns and lighting, cameras, lightning protection masts and weather stations;
- improvement, maintenance, repair and use of existing streets, private tracks and access roads;
- laying down, maintenance and repair of new internal access tracks, ramps, means of access, footpaths, permissive paths, cycle routes and roads, crossings of drainage ditches and watercourses, including signage and information boards;
- temporary footpath diversions and closures;
- landscaping and biodiversity mitigation and enhancement measures including planting;
- tunnelling, boring and drilling works;
- earthworks, site establishments and preparation works including site clearance (including vegetation removal, demolition of existing buildings and structures); earthworks (including soil stripping and storage and site levelling) and excavations; the alteration of the position of services and utilities; and works for the protection of buildings and land; and
- other works to mitigate any adverse effects of the construction, maintenance, operation or decommissioning of the authorised development.

Permitted preliminary works

2.3.3. The permitted preliminary works will be undertaken in accordance with any approved CEMP(s), which must be in substantial accordance with the principles set out within this oCEMP. The permitted preliminary works would involve the following activities (not necessarily in order):

- Environmental surveys, geotechnical surveys, intrusive archaeological surveys and other investigations for the purpose of assessing ground conditions;
- Removal of plant and machinery;
- Above ground site preparation for temporary facilities for the use of contactors;

- Remedial work in respect of any contamination or other adverse ground conditions;
- Diversion of existing services and the laying of temporary services;
- The provision of temporary means of enclosure and site security for construction;
- The temporary displace of site notices or advertisements;
- Site clearance (including vegetation removal, demolition of existing structures or buildings); and
- Work No. 8 (works to facilitate access to Work No. 1 to 7 and 9).

Construction activities

2.3.4. The construction activities will be undertaken in accordance with any approved CEMP(s), which must be in substantial accordance with the principles set out within this oCEMP, and which will be prepared prior to the commencement of the construction activities. The indicative construction activities that would be required comprise (not necessarily in order):

- Site preparation, including minor localised site levelling, vegetation clearance, landscape planting and establishment of perimeter fencing and security measures;
- Import of construction materials, plant and equipment to Site;
- Establishment of Site construction compounds and welfare facilities;
- Appropriate storage and capping of soil;
- Management of waste;
- Upgrading of existing field accesses and construction of new accesses from the highway;
- Upgrading existing tracks and construction of new access roads within the Site;
- Marking out the location of infrastructure;
- Cable installation;
- Trenching in sections;
- Installation of HDD launch and reception compounds;
- Drilling of HDD crossings;
- Appropriate construction drainage;
- Sectionalised approach to duct installation;
- Excavation and installation of jointing pits;

- Cable pulling;
- Testing and commissioning; and
- Site reinstatement (i.e., returning any land used during construction for temporary purposes to its previous condition).

2.3.5. The erection of the Solar PV Mounting Structure and the mounting of the Solar PV Modules within Work No. 1 would include the following activities (not necessarily in order):

- Import and delivery of materials to the Site;
- Piling (where required) and installation of the Solar PV Mounting Structures (see **ES Volume 1, Chapter 3: Proposed Development Description, Plate 3.11** and **Plate 3.12**); and
- Mounting of the Solar PV Modules.

2.3.6. The installation of electric cabling, inverters, transformer, switchgear Works No. 3 and Works No. 4 infrastructure would include the following activities (not necessarily in order):

- Import and delivery of materials to the Site;
- Trenching and installation of cabling;
- Transformer, Inverter and Switchgear installation and construction. Lorry mounted crane or mobile crane would be used to lift the equipment into position;
- Foundation excavation for the Battery Energy Storage System (BESS) and Transformer, Inverter and Switchgear (if required);
- Pouring of the concrete foundation base, where required;
- Installation of transformers that form part of the BESS;
- Construction of control and other buildings that form part of the Collector Compounds and BESS; and
- Installation of control, monitoring and communication systems.

2.3.7. The construction of the Works No. 2 and installation of equipment would include the following activities (not necessarily in order):

- Import and delivery of materials to the Site;
- Foundation excavation and construction;
- Pouring of the concrete foundation base; and
- Installation of the Springwell Substation.

2.3.8. The Grid Connection Corridor and internal cable corridors for the Proposed Development are proposed to be constructed, operated and maintained as outlined in the **Cabling and Grid Connection Method Statement** contained in **Appendix 2** of this **oCEMP.**

2.4. Working Hours

2.4.1. The normal hours of working on any part of the Proposed Development during the construction period will be:

- 7 am to 7 pm hours Mondays to Fridays;
- 7 am to 12 pm hours on Saturdays.

2.4.2. The following controls will also apply to the works:

- No works, including Site deliveries and collections, will take place on Sundays or Public Holidays;
- Working days will be one 12-hour shift, with employees travelling to and from the Order Limits an hour on either side of these times (i.e. between 6 am and 7 am, and 7 pm and 8 pm); and
- Where onsite works are to be conducted outside the core working hours, they will comply with the restrictions pursuant to the DCO consenting process.
- Hours of working for activities such as percussive piling and trenchless/Horizontal Directional Drilling are outlined in Section 2.8 Control of Noise.

2.5. Site Set Up and Compounds

2.5.1. During the construction phase, up to three temporary Primary Construction Compounds will be provided onsite, with up to five temporary Secondary Construction Compound(s) provided at different locations throughout the Solar PV areas (Work No. 1). The locations of the Primary and Secondary Construction Compounds are summarised within **Table 2** and shown within Work No. 7 on the **Works Plans [EN010149/APP/2.3]** and indicatively in **ES Volume 2, Figure 3.10: Location of Primary and Secondary Construction Compounds [EN010149/APP/6.2].**

Table 2 Summary of temporary Construction Compounds

Area	Name	Construction activities from compound
Springwell West (MC1)	Primary Construction Compound 1 (Gorse Hill Lane)	Springwell Substation BESS Ground mounted Solar PV generating station

Area	Name	Construction activities from compound
		Grid Connection Infrastructure Cables
	Secondary Construction Compound 1 (Temple Road)	Ground mounted Solar PV generating station Satellite Collector Compound
Springwell West East of A15 (MC2)	Primary Construction Compound 2 (B1191)	Ground mounted Solar PV generating station
	Secondary Construction Compound 2 (B1191)	Ground mounted Solar PV generating station
	Secondary Construction Compound 3 (B1191)	Ground mounted Solar PV generating station
Springwell Central	Secondary Construction Compound 4 (B1191)	Ground mounted Solar PV generating station
Springwell East (MC3)	Primary Construction Compound 3 (B1188)	Ground mounted Solar PV generating station
	Secondary Compound 5 (B1188)	Ground mounted Solar PV generating station

2.5.2. The three Primary Construction Compounds are located within Springwell West and Springwell East, containing laydown areas and staff welfare facilities. These Primary Construction Compounds are located within fields Tb2, Bcd128, and C8, as shown in **ES Volume 2, Figure 3.10: Location of Primary and Secondary Construction Compounds [EN010149/APP/6.2]**, and each of these compounds has a footprint of up to 25,000m^2 and will provide the primary areas for storage of materials and equipment. Site offices will be erected, and parking provided for construction workers and onward minibus transport to internal working areas.

2.5.3. The five Secondary Construction Compounds across the Site contain a laydown area and staff welfare facilities. These Secondary Construction Compounds will be located within fields Tb3, Bcd139, Bcd093, Bk04, Lf03, and By22, as shown in **ES Volume 2, Figure 3.10: Location of Primary**

and Secondary Construction Compounds [EN010149/APP/6.2], and each will have a footprint of up to 1,250 m^2. These will be used for limited storage of materials and equipment and up to 10 parking spaces. Construction workers will be transported from Primary Construction Compounds to Secondary Construction Compounds and working areas via minibus.

2.5.4. The set up, layout and use of compounds will be confirmed by the Principal contractor with further details described in the CEMP(s).

2.6. Site Security

2.6.1. Site security during construction will be managed by the Principal contractor. The Site security fencing will remain in place throughout the duration of the construction period. Any storage of materials will be kept secure to prevent theft or vandalism. A safe storage system for accessing the materials storage areas would be implemented by the Principal contractor.

2.6.2. Site security and fencing to be installed during the construction phase will be confirmed by the Principal contractor and included in the CEMP(s).

2.7. Control of Light

2.7.1. Construction temporary site lighting, in the form of mobile lighting towers will be required in areas where natural lighting is unable to reach (sheltered/confined areas) and during core working hours within winter months. Artificial lighting would be provided to maintain sufficient security and health and safety for the Order Limits, whilst adopting the mitigation principles to avoid excessive glare and minimise spill of light to nearby receptors (including ecological and residential) outside of the Order Limits as far as reasonably practicable.

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

- The use of lighting will be minimised to that required for safe Site operations;
- Lighting will conform to best practice guidelines with respect to minimising light spill into adjacent habitats and prevent disturbance to bats and other species during construction;
- Lighting will utilise directional fittings to minimise outward light spill and glare (e.g. via use of light hoods/cowls which direct light below the horizontal place, preferably at an angle greater than 20° from horizontal); and

- Lighting will be directed towards the interior of the Order limits rather than towards the boundaries.

2.7.3. Lighting design will be confirmed at detailed design and will be included in the CEMP(s).

2.8. Control of Noise

2.8.1. Noise thresholds have been identified for nearby sensitive receptors during construction, presented in **ES Volume 1, Chapter 12: Noise and Vibration [EN010149/APP/6.1]** (and based off Annex E of BS5228-1), and the applicable noise thresholds will be defined in each of the CEMP(s). Thus, where onsite works are to be conducted outside of the core working hours, they will comply with any restrictions agreed with the relevant planning authority and reflected in the CEMP(s), in particular regarding the control of noise and traffic. Compliance with these noise limits will ensure adverse effects are unlikely. Abnormal or emergency construction traffic movements may occur outside of normal working hours. In the event of these occurrences, specific noise mitigation measure will be put in place to reduce potential noise impacts at nearby noise sensitive receptors as set out in **Section 3** of this **oCEMP**.

2.8.2. If percussive piling is used within close proximity of receptors (when works are undertaken within 400m of residential properties) for the foundations for the Mounting Structure, this should be further restricted to no more than two periods of four hours each with at least one hour of no piling between the four-hour periods. It should also be restricted to the hours of 8 am to 6 pm Monday to Friday and 8 am to 12 pm noon on Saturdays.

2.8.3. Activities such as trenchless/Horizontal Directional Drilling could be required outside of the assumed day-time construction hours (i.e. evening, Sundays, Bank Holidays or at night), which will be agreed upon with the relevant planning authority prior to these works.

2.8.4. If night-time operation is required, the closest residents to the works shall be notified of the start and completion of the works. The horizontal directional drilling plant would be installed and operated such that noise levels do not exceed a level of 45dB LA_{eq} at the closest neighbouring noise-sensitive locations during night-time operation of equipment. Depending on the plant used, location, pit depth, etc., this may require the use of acoustic screening using temporary solid barriers with a height of at least that of the drilling equipment located in proximity (around 10m or less) of the trenchless drilling work.

2.9. Construction Traffic Management and Access Routes

2.9.1. During construction, the appointed contractor(s) will ensure that the impacts from construction traffic on the local community (including local

residents and businesses and users of the surrounding transport network) are minimised, where reasonably practicable by implementing the measures set out in **ES Volume 1, Chapter 14: Traffic and Transport [EN010149/APP/6.1],** and the **Outline Construction Traffic Management Plan (oCTMP) [EN010149/APP/7.8]**.

2.9.2. The **oCTMP [EN010149/APP/7.8]** includes details on construction logistics and construction worker travel; alongside controls to guide the delivery of material, plant equipment and staff during the construction phase. A detailed CTMP will be required to be produced by the contractor(s) and agreed with the relevant highways authorities prior to the commencement of construction activities.

2.9.3. An **Outline Travel Plan** has been prepared as part of **Appendix 1** of the **oCTMP [EN010149/APP/7.8].** The Outline Travel Plan sets out strategies to encourage the use of sustainable transport for the construction workforce.

2.9.4. The contractor will implement measures to control and mitigate and dust tracking onto the highway, including vehicle wheel cleaning. Additionally, a road sweeper will be deployed when required, to remove any mud and dust that has tracked onto the highway.

Parking provisions

2.9.5. As detailed in the **oCTMP [EN010149/APP/7.8]**, car parking will be located at or adjacent to each of the Primary Construction Compounds. Adequate parking spaces will be provided for the maximum number of personnel at each main compound applying a ratio of 1.5 workers per vehicle. Car parking will also be provided at the five Secondary Construction Compounds with up to 10 parking spaces.

2.9.6. Further details of parking provision will be confirmed by the Principal contractor with further details described in the detailed CTMP.

2.10. Construction Waste Management

2.10.1. Waste arising from construction is not anticipated to consist of substantial amounts of waste electrical or electronic equipment. Where this does arise, this would be recovered and recycled by an authorised reprocessor as required by the Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 **[Ref. 1]**.

2.10.2. Prior to construction works commencing, a Site Waste Management Plan (SWMP) will be prepared by the contractor which will identify waste streams, plan appropriate arrangements and procedures accordingly, ensure legal requirements are identified and complied with and identify opportunities for waste minimisation and sustainable material use. The

SWMP will be based on the **Outline Site Waste Management Plan (oSWMP)** contained in **Appendix 1 of this oCEMP [EN010149/APP/7.7]** and finalised with specific measures to be implemented prior to the start of construction.

2.10.3. All waste to be removed from the Order Limits will be undertaken by fully licensed waste carriers and taken to licensed waste facilities. The waste hierarchy will be applied, in priority order: prevention, preparation for reuse, recycled, other recovery and disposal.

2.11. Environmental Incidents and Emergencies

2.11.1. An Emergency Preparedness and Response Plan will be developed in consultation with the relevant local authority emergency planning officer, emergency services including the local fire service, as well as the Environmental Agency in relation to responding to flood warnings and events.

2.11.2. The plan will also detail the procedures for responding to incidents (such as spills, leaks or generation of silt laden runoff as to prevent pollution) and emergencies (such as flooding) onsite, and any reporting. This will also include the arrangements for all incidents, including environment incidents, and will include the procedures for the immediate response, reporting, stakeholder communications, and incident investigation.

2.12. Protection of Below Ground Utilities

2.12.1. Engagement with utilities companies will be undertaken prior to commencement of construction activities to identify utilities and agree safe methods of working around existing utilities.

2.12.2. Offsets around major utilities will be implemented, as agreed with each utility owner, to avoid impacts.

2.13. UXO

2.13.1. A Detailed UXO Risk Assessment has been undertaken for the Site, as detailed in **ES Volume 3, Appendix 11.3: Detailed UXO Risk Assessment [EN010149/APP/6.3]**, which deemed the majority of the Site as being at a low risk from items of Allied UXO. The risk of UXO will be managed by the implementation of a UXO Risk Management Plan for intrusive works and site-specific awareness briefings, alongside attendance by a UXO specialist and onsite support for intrusive works in areas of medium risk.

2.14. Housekeeping and Site Maintenance

2.14.1. As outlined in the fifth edition of Construction Industry Research and Information Association's (CIRIA) 'Environmental good practice on site guide' (C811) **[Ref. 2]**, when considering good housekeeping, the appointed Contractor should implement the following recommendations:

- Adequately plan the Site with designated areas of materials and waste storage;
- Segregate and label different types of waste as it is produced and arrange frequent removal;
- Keep the Site tidy and clean;
- Ensure that no wind-blown litter or debris leaves the site, use covered skips to prevent wind-blown litter;
- Keep hoarding tidy - repair and repaint when necessary, removing any fly posting or graffiti;
- Frequently brush-clean wheel washing facilities and keep haul routes clean from site derived materials;
- Keep roads free from mud by using a road sweeper; and
- Ensure the Site is secure.

2.14.2. In addition, Site personnel should uphold site etiquette, which includes maintaining personnel cleanliness, such as keeping personal protective equipment (PPE) clean, and using respectful and professional language whilst on and offsite.

2.15. Best Practice Measures

2.15.1. The Considerate Constructors Scheme (CCS) will be adopted to assist in reducing pollution and nuisance from the Scheme, by employing good practice measures which go beyond statutory compliance.

2.16. Community Liaison and External Communication

2.16.1. A Community Liaison Group (CLG) will be established for the duration of the construction period.

2.16.2. Prior to the commencement of the construction phase, the Applicant will submit to the relevant planning authority for approval of the terms of reference for a community liaison group whose aim is to facilitate liaison between representatives of people living in the vicinity of the Order Limits and other relevant organisations in relation to the construction of the Proposed Development.

3. Construction Environmental Management and Mitigation Procedures

3.1. Topic-specific mitigation

3.1.1. A summary of the mitigation and management measures to be included as minimum in the CEMP(s), using information presented in the **ES Volume 1 [EN010149/APP/6.1]**, is provided below. It also identifies where monitoring is proposed to assess the effectiveness of the mitigation measures.

Table 3 Air quality

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
• **Impact on nearby sensitive human and ecological receptors (i.e. Local Wildlife Sites (LWSs) from increased nitrogen dioxide, particulate matter and dust emissions from construction works including operation of construction equipment.**	**Communications** • Develop and implement a stakeholder communications plan that includes community engagement before work commences on Site. **Site Management** • Site management measures to monitor, record, and address all dust and air quality complaints, share relevant information with local authorities, and document any exceptional incidents and actions taken to mitigate dust emissions. **Monitoring** • Undertake regular onsite and offsite inspections, where receptors (including roads) are nearby, to monitor dust and compliance with the Dust Management	It is recommended that during construction phase, dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations are agreed with North Kesteven District Council and Lincolnshire County Council. Where possible, baseline monitoring should commence at least three months before work commences on Site. Other monitoring requirements will be confirmed in the CEMP(s).	Principal contractor Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Plan, record inspection results, and make the inspection log available to North Kesteven District Council and Lincolnshire County Council when asked. Monitoring should, where possible, include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of the Order Limits in agreement with the relevant homeowners/landowners. • Increase the frequency of Site inspections by the person accountable for air quality and dust issues onsite when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. • During the construction phase, agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with North Kesteven District Council and Lincolnshire County Council. Where possible commence baseline monitoring at least three months before demolition work commences on Site. **Preparing and maintaining the Site** • Measures for preparing and maintaining the Site, such as keeping machinery and dust-generating activities away from receptors, implementing dust suppression or		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	containment measures, maintaining clean fencing and barriers, promptly remove or cover dust-producing materials, and cover, seed, or fence stockpiles to prevent wind dispersion.		
	Operating vehicle/machinery and sustainable travel • Ensure all vehicles switch off engines when stationary, no idling vehicles.		
	Construction operations • Implement dust control measures during construction operations by using cutting, grinding, or sawing equipment with dust suppression techniques, ensuring an adequate non-potable water supply for dust mitigation, utilising enclosed chutes, conveyors, and covered skips, minimizing drop heights for loading and handling, and promptly cleaning up any spillages using wet cleaning methods.		
	Waste management • Avoid bonfires or burning of waste material.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Measures specific to construction • During construction, avoid scabbling where possible, store sand and aggregates in bunded areas to prevent drying out unless necessary with additional control measures, ensure bulk cement and fine powders are delivered in enclosed tankers and stored in silos with emission control systems, and seal and store smaller bags of fine materials to prevent dust emissions.		
	Measures specific to trackout • Implement a wheel washing system, use water-assisted dust sweepers on access and local roads to remove material trackout of the Site, avoid dry sweeping of large areas, ensure vehicles entering and leaving the site are covered to prevent material escape, and record inspections of haul routes and actions taken in a Site logbook.		
	• Any emissions from non-road mobile machinery can be reduced by ensuring that any plan used on site comply with nitrogen oxides, particulate matter and carbon monoxide emissions standards specific in the Regulation (EU) 2016/1628 of the European Parliament and of the Council		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	[Ref. 3] as a minimum, where they have net power of between 37kW and 560kW. The emissions standards vary depending on the net power the engine produces.		

Table 4 Biodiversity

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
• **Habitat loss or gain** • **Fragmentation of population or habitats** • **Change in normal conditions (light, noise, vibration, human activity) impacting flora and fauna** • **Habitat degradation** • **Species mortality**	• Control measures that will be implemented during construction to protect LWS, semi-improved grassland, hedgerows, hedgerow trees, notable arable floras and other important habitats from potential construction related effects, including dust deposition, air pollution, pollution incidents and water quality, would be provided through the adoption of construction industry good practice and environmental protection legislation. • Good practice pollution control and a minimum works buffer of at least 6m to protect ponds present within the Order Limits. • Good practice measures to protect trees, during construction and decommissioning	N/A	Principal contractor Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	in-line with the British Standard "Trees in Relation to Design, Demolition and Construction to Construction - Recommendations" (BS 5837) (2012) **[Ref. 4]**, to ensure that trees are appropriately and successfully retained during construction. • An suitably qualified ecologist would be appointed during construction to advise on protecting important biodiversity features and provide advice on how to achieve compliance with environmental legislation. Relevant Site staff would receive toolbox talks on the ecological risks present, legal requirements and working arrangements necessary to comply with legislation. Toolbox talks will be repeated as necessary over the duration of the relevant works. • Pre-construction surveys will be undertaken to validate and, where necessary, update the baseline survey findings (for example badger and barn owl surveys). The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on up to date protected		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	species information. This will also be required for any protected species licensing that may be identified as being necessary at the detailed design stage. • Preparation of mitigation strategies/precautionary working method statements for protected and notable species (such as two stage vegetation clearance to avoid harm to reptiles, covering open excavations overnight or installing ramps to prevent animals being trapped, nesting bird checks, barn owl surveys). **Ground nesting and wintering birds** • Vegetation clearance would avoid the main nesting bird period (March to August inclusive) where possible. Any vegetation clearance or ground clearance proposed within the nesting bird period would be checked for the presence of any nests by a suitably experienced ecologist within 48 hours prior to vegetation removal or ground clearance. If active nests are found, appropriate buffer zones will be put in place and the area monitored until the young birds		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	have fledged. Cleared ground would be maintained in a disturbed state in the run up to construction commencing to minimise the risk of ground nesting birds attempting to nest.		
	Barn owls • Pre-commencement surveys for barn owl would be undertaken in advance of construction works commencing. Suitable measures, including appropriate buffers from nests during the breeding season, would be delivered to ensure disturbance is avoided in line with the relevant legislation.		
	Bats • Good practice measures for lighting: in-line with the Bat Conservation Trust, Guidance Notes 08/18: Bat and artificial lighting in the UK Bat and the Built Environment series, Institute of Lighting Professionals (2018) **[Ref. 5]** to mitigate impact to bats and other nocturnal species during construction., operation and decommissioning. • For key hedgerows that are connected to other hedgerows, watercourses or	The effect of Solar PV modules on bats' use of solar farms is uncertain due to lack of research. Therefore monitoring of bat activity will be undertaken during the construction	

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	woodland; do not already have gaps of more than 10m wide, and/or where sections of 10m or more in length are proposed to be removed, mitigation would be required in the bat activity season (April to October) to maintain linear connectivity for foraging/commuting bats. This would involve the temporary installation of structures in hedgerow gaps mimicking the hedgerow which bats could use for echolocation when commuting e.g. a double row of 'heras' type fencing with camouflage type netting on top or filled with brash; or shrubs/trees in movable planters every 5m. This mitigation would be installed immediately after hedge removal (if in the bat activity season April to October) and left in place until works are completed. If the mitigation needs to be removed for works such as construction traffic access, the mitigation would be re-instated at the end of each day and retained until any new or replacement hedgerow is sufficiently established as an effective flightline.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Arboricultural • The production of an Arboricultural Method Statement **Invasive species** • Biosecurity measures will be undertaken as appropriate, such as checking new planting stock (e.g. potted plants or tree root balls) are free from invasive seedlings before bringing onto Site and ensuring vehicles, clothing and equipment are clean and free from contaminated soil/seeds where appropriate.	N/A	

Table 5 Climate

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
• **Release of greenhouse gas (GHG) emissions during construction**	• Lean design to minimise use of concrete, steel, aggregates, etc. • Responsible sourcing of materials and infrastructure. • Use of products with lower embodied/pre-use phase emissions will significantly improve the	N/A	Applicant

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	carbon balance of the Proposed Development		
	• All members of the supply chain will provide a carbon reduction plan, where feasible.		Principal contractor Responsibilities will be confirmed within the CEMP(s).
	• Implementing measures to decrease fuel use by maximising energy efficiencies, for example to ensure all vehicles switch off engines when stationary and ensure vehicles are well maintained and conform to current emission standards.		
	• Promoting the use of sustainable fuels in vehicles, and where possible making use of electric vehicles to reduce fuel consumption.		
	• Using locally sourced and/or produced materials. The use of recycled aggregates, where practicable, for foundations, subbases, hard-standings and pavement materials.		
	• Actions to meet the waste hierarchy in accordance with the principles of the Government's Resources and waste strategy for England 2018 **[Ref. 6].** Promoting the recycling of materials by segregating		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	construction waste to be re-used and recycled where practical.		

Table 6 Cultural heritage

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
• **Dust from construction activities** • **Permanent impacts to previously unrecorded archaeological remains** • **Permanent impacts to known archaeological resource through intrusive activities**	• Standard of good practice as set out in the Institute of Air Quality Management (IAQM) 'Guidance on the Assessment of Dust from Demolition and Construction' **[Ref. 7],** will be following during the construction, operation (including maintenance) and decommissioning to minimise dust from activities and vehicles that might impact on cultural heritage assets. **Milepost 20 metres south of Ashby Lodge Farm (grade II listed building NHLE 1061824)** • Photographic survey (following Historic England guidance) in advance of construction to record current condition; toolbox talks to ensure construction staff, subcontractors and visitors are aware of presence of listed building and need to avoid physical impacts.	Monitoring of the archaeological mitigation measures would be carried out by the Lincolnshire County Council Historic Environment Team to ensure that the measures set out in the **oWSI [EN010149/APP/7.15]** remain appropriate following further investigation, that the Archaeological WSI is adhered to, and that any post-excavation analysis and reporting is conducted in accordance with the WSI (or subsequently agreed amendments to this).	Principal contractor Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	WWII aeroplane crash sites (non-designated heritage assets MLI25416 and MLI25417) • Piling will be avoided in these areas (as shown in **ES Volume 2, Figure 9.8: Indicative Archaeological Mitigation Areas, EN010149/APP/6.2]**), detailed design will seek to route cables outside of the crash site locations so that these sites will be preserved in situ. If avoidance in this way is not possible then cables would be routed above ground or targeted areas of archaeological investigation would take place. **Other known non-designated heritage assets within cable route areas** • Targeted areas of archaeological investigation (strip, map and sample, or excavation in advance of construction) will take place within the archaeological mitigation areas shown in **ES Volume 2, Figure 9.8: Indicative Archaeological Mitigation Areas [EN010149/APP/6.2]** so that the archaeological remains can be investigated and recorded.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Assets include: Lincolnshire County Council HER references MLI87417, MLI90983, MLI87414, MLI84711, MLI86753, MLI961987, MLI90995, MLI90993, non-designated heritage assets AA51, AA44, AA36, AA31. **Known non-designated heritage assets within Solar PV development** • Non-intrusive construction methods such as concrete feet and string inverters will be used within the archaeological mitigation areas shown in **ES Volume 2, Figure 9.8: Indicative Archaeological Mitigation Areas [EN010149/APP/6.2].** • Assets include: Lincolnshire County Council HER references MLI87449, MLI87423, MLI87443, MLI87444, MLI87445, Non-designated heritage assets: AA60, AA63, AA55, AA56, and AA42. **Potential currently unknown archaeological remains** • A programme of further archaeological evaluation in line with the **oWSI [EN010149/APP/7.15]** will be undertaken and		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	followed by mitigation measures to be agreed with Lincolnshire County Council.		
	Possible rectilinear double ditched enclosure identified in geophysical survey west of A15 and possible area of archaeological remains identified in geophysical survey west of A15 (Non-designated heritage asset AA01) • If detailed design can't avoid impacts to these assets a programme of archaeological work in line with the **oWSI [EN010149/APP/7.15]** will be carried out.		
	Brauncewell medieval village scheduled monument (NHLE 1018397) • Detailed earthwork survey of monument in line with **oWSI [EN010149/APP/7.15]** and Historic England guidance.		Applicant

Table 7 Landscape and visual

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
• **Loss of existing landscape features**	• All construction is undertaken in a sensitive manner with regard to the existing landscape	A programme of monitoring relating to the establishment and maintenance of the	Principal contractor

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
and visibility of construction activities	fabric within the Site. It will ensure that all existing hedgerows, trees and woodland will be retained and protected during construction (except where removal is indicated on the vegetation removal plans shown in **ES Volume 2, Figure 3.11: Vegetation Removal Parameters [EN010149/APP/6.2]**). It will also ensure that construction compounds maintain a neat and tidy appearance and that any temporary construction lighting is operated in accordance with an agreed scheme.	mitigation structure planting and new habitats is set out in the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9].** The soil resource within the Site will be managed during decommissioning in accordance with the principles established in the **Outline Soil Management Plan [EN010149/APP/7.11].** It will ensure that the soils are suitable following decommissioning for maintenance of the habitats established including the strategic planting proposed for mitigation of landscape and visual effects.	Responsibilities will be confirmed within the CEMP(s).

Table 8 Land, soil and groundwater

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
• **Contamination of soil/groundwater related to potential spills from construction plant through operation or refuelling activities, and spillages and leaks of fuels, oils and chemicals.** • **Changes to land drainage as a result of piling activities, earthworks, access tracks and excavation.** • **Compaction and deterioration of soil and agricultural land as a result of trafficking of agricultural land by construction vehicles,**	**Land and groundwater** • An interpretive report is required relating to site investigation work that has already been completed. An interpretive report will be produced prior to construction works commencing and will be issued to Lincolnshire County Council. This will provide further information relating to potential pollutant linkages that were identified by **ES Volume 3, Appendix 11.2: Preliminary Risk Assessment [EN010149/APP/6.3]**. • Procedures to mitigate against erosion, prevent disturbance of contamination, and emergency procedures to manage accidental spillages and leaks in order to minimise any risk to the soil and groundwater during the construction phase. • Completion of a piling risk assessment prior to construction works commencing. *Water Pollution* • Surface water and drains must be protected from silt run-off: use drain guards to protect drains. Use straw bales, gravel traps or silt	The activities undertaken during the construction phase will be audited against the requirements of the CEMP(s) and the Soil Management Plan (SMP) by the Principal contractor to ensure adherence.	Applicant Principal contractor Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
compounds, installation of the cable route and earthworks.	fencing to protect surface waters. All silt protection measures must be inspected frequently and maintained throughout the works.		
• **Deterioration of soil due to handling during construction.**	• Stockpiles of contaminated materials must be situated on an impermeable surface at least 10m from any surface waters or drains, and run-off collected within a bund. • Tracking or washing out next to drains/surface waters must be avoided. • When dewatering, any pump shall be switched off before removing the last potion of water and suspended solids will be allowed to settle out before discharging. • All drains located adjacent or near to generators to be covered with drain guards. • Potentially contaminated water must be tested before dewatering. Contaminated water must be treated or discharged offsite. • Road sweepers shall be utilised where necessary. • Silty water and associated run-off to surface water and drains must be avoided: minimise		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	any areas of soil stripping and stockpiling, control water volumes used to supress dust, batter/sheet stockpiles where required. • If a discharge consent is required, then all conditions within the consent must be understood before commencement of dewatering. *Fuel storage* • Fuel levels shall be monitored and recorded regularly (sudden changes may be a sign of leaks). • Fuel tanks, secondary containers and storage compounds shall be inspected regularly for damage, corrosion, leaks, faults and vandalism. Repair defects/faults immediately and retain records. • The secondary containment system must provide storage for at least 110% of the tanks maximum capacity and ensure that any valves, filters, sight gauges, vent pipes or other ancillary equipment are also situated within the secondary containment		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	system and arranged so that any discharges would be contained. • Fully lockable and labelled 'Fuel Safe Static Tank' will be deployed. • Sufficient spill kits will be provided. Spill kit supply to be monitored regularly to ensure adequate stock remains full. • Spill kits will be available within each plant onsite and located close to identified pollution sources or sensitive receptors (fuel storage areas, water course crossings, etc.). • All drains located adjacent or near to refuelling points shall be covered by a drain guard before commencing transfer. All fuel transfers to be supervised. • Drums must be stored in a secure interceptor drum store within the designated refuelling area. • Oil spill and oil impacted water must be collected in a fuel safe container with fuel tags. Fuel spills must be contained using the spill kits provided, spills should be		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	reported to the contractor's Site Manager immediately. • Records must be maintained of all environmental incidents, mitigation works, clean up method and validation. • A suitable container for hazardous wastes must be provided within the waste compound. *Refuelling* • Where possible, refuelling should only be carried out in a designated area, which will be secured/locked out of hours. • The refuelling area shall be located away from drains and watercourses (>10m from a watercourse and >50 meters from a spring, well or borehole). • Areas of permanent waste oil/fuel/chemical storage will be located 50m away from watercourses or drainage paths. Where this is not possible, advice will be sought from the ECoW and a minimum distance will be agreed with the Applicant.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Refuelling will always be supervised by a competent supervisor. • Mobile plant must be refuelled away from surface waters, drains, permeable pavements and open excavations. A fuel drip tray must be used. *Use and storage of hazardous materials/substances* • Concrete wash-out onsite shall only be permitted when the Principal contractor has provided a designated, suitably prepared wash-out area with signage identifying the area as suitable for wagon wash-out. • Concrete wash-out may be dried and crushed to be re-used on Site or disposed of in accordance with a Site Waste Management Plan. • Surplus dry concrete, cement and grout is to be collected and reused where possible e.g., as inert rubble; reuse of dried materials may require environmental permits or exemptions. • Areas of permeable pavements are not to be used for the temporary storage of		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	cement bags. If unavoidable ensure adequate protection measures are in place to prevent the pavement from becoming blocked. • The Principal contractor is responsible for carrying out a risk assessment of each substance and ensuring that all appropriate storage, protective equipment and if necessary, emergency procedures are put in place on Site. • All hazardous materials shall be labelled, sealed and stored with their COSHH assessment in a bunded and lockable container away from drains and watercourses when not in use. • COSHH datasheet will be read and understood before using any hazardous materials. • Any spent (contaminated) spill kits, absorbent granules, sheets or fibres must be disposed of in accordance with COSHH regulations and Site Waste Management Plan requirements.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Hazardous liquids shall be transferred using a funnel and drip tray and sealed and returned to the container immediately after use. Damaged containers shall be reported to the Site Manager. • All usages of hazardous liquids shall comply with its requirements for safe handling and storage. • Hazardous liquids must be re-sealed after use. Empty containers are to be disposed of to the designated container within the waste compound. • Construction workers are required to wear PPE such as gloves and face masks (where appropriate) to prevent dermal contact and inhalation or ingestion. *Site set up, groundwork and construction* • Minimise the use of builders skips and inspect lifting and locking points, doors and door locks and general condition weekly as minimum. • Ordered materials shall be adequately managed to avoid spoilage or overordering		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	and surplus materials shall be minimised: provide a suitable and sufficiently sized materials storage compound that is lockable and provides an above-ground covered area, protected from wind and rain. Encourage the reuse of cut-offs and arrange for suppliers to take back unused surplus materials and packaging. Storage compounds will be located away from any identified water features. • Surplus materials are to be reused onsite where possible. All reuse and recycling to be carried out in accordance with the terms of a valid waste exemption or voluntary codes of practice/protocols. • Excavated material surplus shall be minimised so far as practicable; details of all inert material reuse onsite including composition and disposal location must be mapped and records retained. • If necessary temporary bunding and/or settlement ponds will be installed to allow for isolation and onsite treatment of any sediment laden or contaminated water prior to discharge to the drainage system.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Spill kits capable of dealing with hydrocarbon and chemical spills shall be available at all worksites. Each storage location shall be clearly visible to the workforce, for instance by deploying clear signage. • If a construction compound, fuel storage point or COSHH store is provided then additional spill kits will need to be available at each separate location. • The spill kit contents shall include absorbent pads, absorbent booms, absorbent granules and hazardous waste disposal sacks as a minimum. Regular checks of the spill kits shall be completed to ensure they remain adequately stocked to deal with environmental incidents. • Spill drills shall be performed periodically to confirm that the workforce can effectively contain and clear up potentially polluting spillages. All drills will be documented and details kept on record for the duration of the works.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

	Spillages and Leaks
	
	All pollution incidents should be managed through the STOP – CONTAIN – NOTIFY concept.
	
	STOP: Immediately stop the discharge to prevent further spread to drainage, waterbody or ground.
	
	CONTAIN: Control the spill to prevent environmental impact, such as by stopping works or using containment material. Personal safety take priority, especially if the spill substance is unknown.
	
	NOTIFY: Promptly inform the appropriate authorities and contacts e.g. Environment Agency and the Applicant.
	
	• Oil, Fuel or Chemical Spill to Ground:
	  ○ Wearing protective clothing, stop release at the source and secure the area.
	  ○ Create temporary bunds to contain the spill if it is migrating.
	  ○ Protect nearby drains/ditches using drain seals or spill kit materials.
	  ○ Absorb the spill with granules or pads from the spill kit.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

- Notify the Environment Agency with details on time, type/quantity, location, and site contact information.
- Inform the Applicant and Local Planning Authority if required under Environmental Damage Regulations.
- Keep containment in place until contamination is assessed and a remediation strategy is developed.

- Oil, Fuel or Chemical Spill to Waterbody:
  - Wearing protective clothing, prevent further release at source and contain the spill.
  - Deploy booms from the spill kit across the water to stop spread; tie them to banks and add more as needed.
  - Notify the Environment Agency with discharge details and inform the Applicant.
- Oil, Fuel or Chemical Spill to Drainage System:
  - Wearing protective clothing, stop further release and deploy drain covers to affected gullies.

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

- Supplement containment with booms around the gully to control migration.
- Notify the Environment Agency and relevant water company with details on discharge time, type/quantity, specific drain location, and contact information.
- Notify the Applicant and Environment Agency as needed.

- Discovery of Unexpected Contamination
  - Halt works immediately upon discovering contamination.
  - Place removed impacted materials back into the excavation or onto a membrane to prevent further spread.
  - Report the discovery to the Applicant.
  - Arrange for fast-turnaround sampling and testing.
  - Continue work only once contamination is confirmed and a safe working procedure is established.

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

- Do not excavate further without supervision from a geo-environmental engineer.

- Silt Discharge
  - Cease dewatering or other activity causing silt release.
  - Use drain seals, hay bales, silt fencing, or bunds to contain and direct silt away from sensitive areas.
  - If the silt discharge enters drains or surface waters without prior approval, notify the Environment Agency and relevant water company.
- Contamination involving Wate Materials
  - Evacuate the area if necessary, especially if fumes are present.
  - Assess whether segregation of waste can mitigate the issue.
  - Conduct a risk assessment including COSHH considerations.
  - If segregation is unsafe, classify the entire waste volume as hazardous.

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	○ Report the incident to the Applicant. • Dispose of waste according to standard site procedures. **UXO** • The risk of UXO will be managed by the implementation of a UXO Risk Management Plan for intrusive works and site-specific awareness briefings, alongside attendance by a UXO specialist and onsite support for intrusive works in areas of medium risk (See **Section 2.13** of this oCEMP).		

Table 9 Noise and vibration

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
• **Noise due to construction activities, including traffic, operation of plant and machinery, impacting on the existing noise environment and**	Noise impacts at receptors during the construction phase activities would be minimised through best practice measures, Best Practicable Means (BPM) as defined by the Control of Pollution Act 1974. Such measures are as follows: • Ensure that each item of equipment complies with the noise limits quoted in The Noise	Appropriate targeted monitoring will be undertaken at receptors during the construction phase. This will be based on the outcomes of further additional detailed construction assessments to be undertaken by the Principal contractor, with	Principal contractor Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
affecting local amenity.	Emission in the Environment by Equipment for use Outdoors Regulations 2001 **[Ref. 8].** • Maintain all vehicles, equipment and noise control measures in good and efficient working order and operated to minimise noise emissions, as prescribed by the manufacturer. • Plant and equipment which can be supplied with fitted noise reduction modifications, such as exhaust silencer systems and pile driver shrouds, shall be preferentially selected where available. • Screw piling to be utilised in fields of Solar PV development which are adjacent to receptors, where possible and feasible i.e. subject to ground conditions and archaeology. • All plant and equipment in intermittent use shall be shut down during periods between work. • No operation of any defective equipment or items fitted with noise control equipment until repaired. • All engine compartments or acoustic enclosures are closed whilst engines are running.	short-term monitoring proposed as a measure to ensure noise levels remain within relevant criteria. See **Section 4 Implementation** and **Section 5 Monitoring and Reporting** within this oCEMP for setting up and publicising a contact point with the principal contractor to log, monitor and address any complaints associated with noise during the construction. Provision of monthly reporting of information to local residents (including public rights of way users) to advise of potential noisy works that are due to take place will be included in the CEMP(s).	

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Erection of temporary hoardings to screen construction activities close to receptors. • A quiet working ethic will be employed to ensure that all members of the workforce have consideration for the nearby residents. • Shouting and use of radios when entering to and from Site, and when working onsite, will be controlled. • Operatives will be briefed not to sound car horns to gain access to the Primary and Secondary Construction Compounds. To assist, security will arrange for the Site to be unlocked up to one hour prior to the start of the core working hours. • No deliveries shall be accepted after 18:00 hours Efforts will be taken to reduce number of staff/operative cars arriving at Site, through the use of crew buses and car share arrangements. • Control and limit noise from reversing alarms and shall use the following hierarchy: • Design the Primary and Secondary Construction Compound layouts to limit and avoid the need for the reversing of		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

	vehicles and ensure that drivers are familiar with the worksite layout;
	• Utilise banksmen to avoid the use of reversing alarms;
	• Use reversing alarms incorporating one or more of the features listed in hierarchical order below or any other comparable system:
	  ○ High directional sounders;
	  ○ Use of broadband signals;
	  ○ Self-adjusting output sounders;
	  ○ Flashing warning lights; and
	  ○ Set reversing alarms to the minimum output noise level required for health and safety compliance.
	
	Toolbox talks will be carried out by the Principal contractor to ensure that all members of the workforce are aware of their possible noise impact and of the sensitivities of the vicinity. These will also ensure that BPM of control are delivered on the Site.		

Table 10 Water

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
• **Sedimentation and pollution of watercourses from silt-laden run off from construction activities.** • **Spillages and leaks of fuel, oils and chemicals effecting the water quality of local watercourses if spilled directly into the water or allowed to runoff towards watercourses during rainfall events.** • **Increased demand on water resources as potable water will be required for the staff on site and raw water required for**	The protection of water quality will be focused on reducing the mobilisation of silt and pollutant chemicals from entering watercourses, usually via rainfall runoff. Pollution prevention measures will include: • No vehicle, equipment or material storage is permitted within the Flood Zone 2 or Flood Zone 3 or within 20 m of watercourses, where practicable. • The placement of stockpiled materials as far away as practically possible from sensitive receptors (including watercourses). • Vegetation removal will be undertaken on a phase-by-phase basis to avoid excessive exposure to bare soil. • Silt fencing or straw bales to be placed downslope of construction works to prevent silt entering watercourses. • Additional silt fencing kept on site for deployment at short notice. • A wheel wash will be located at the Primary Construction Compounds to reduce silt migration across the Site. • Vehicles to be inspected at the start of each day, and vehicles showing signs of fuel/oil	No requirements for monitoring of receptors. It would be best practice to monitor the effectiveness of silt management works during the construction phase, particularly immediately following prolonged periods of ensure silt-laden runoff has not entered the water course. Other monitoring requirements will be confirmed in the CEMP(s).	Principal contractor Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
construction activities.	drips missing fuel caps, or damaged hydraulics will be rejected and not used on Site before repair. • Fuels will be stored in a double skinned locked and bunded fuel bowser as far away from watercourses as reasonably practicable. Refuelling will be carried out over a drip tray. These will be regularly maintained and inspected for rainwater. Rainwater will be removed by specialist removal. A spill kit will be located next to any bowser. • Spill kits will contain as a minimum: spill booms, granules, mats and gully covers. • If groundwater pumping is necessary for excavations, the wastewater must be disposed of in accordance with Environment Agency guidance. • All surface waters and drains must be protected from silt runoff using gully guards, straw bales, gravel traps or silt fencing. These measures must be inspected daily. • Adherence to **HDD Fluid Breakout Plan** which forms **Appendix 3** of this **oCEMP.** • Potable water requirements for temporary welfare facilities during the construction		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	phases are to be met by bringing in potable water using a bowser. The welfare facilities that will be included as part of the Springwell Substation will have a mains supply and once constructed will be used for worker welfare during the construction phase. • Potential non-potable water usage during the construction phase may include some mixing of concrete for smaller works like curbing, post setting and brickwork. However, overall the non-potable water usage within the Site will be reduced by importing pre-mixed concrete into the Site for construction for those activities where it is required. • Flood Awareness: Site managers are registered with the Environment Agency's Flood Warning system to provide adequate forewarning in the event of a predicted flood for site personal within the northeastern region of the Site to evacuate to an area of safe refuge, upgradient, to the west.		

4. Implementation

4.1.1. The CEMP(s) will set out all roles, responsibilities and actions required in respect of implementation of the measures described within this oCEMP, including:

- An organogram showing team roles, names and responsibilities;
- Training requirements for relevant personnel on environmental topics;
- Information of onsite briefings and Toolbox Talks that will be used to equip relevant staff with the necessary level of knowledge to follow environmental control procedures;
- Measures to advise employees of changing circumstances as work progresses;
- Communication Strategy (internal and external);
- Procedures for monitoring, inspections and reporting of site operations;
- Document control; and
- Environmental emergency procedures.

4.1.2. Detailed CEMP(s) are also to include further details of the following measures:

- Construction Method Statements;
- Construction programme;
- Hours of work;
- Details of construction lighting;
- Details of site security and fencing arrangements;
- Details of Site set up, layout and use of Construction Compounds, including parking provisions;
- Information regarding procedures for the accidental release of potential pollutants including fuel/oil spillage and surface water release, including pollution incident response plans;
- Monitoring requirements;
- Details of accordance with the SWMP.

4.1.3. In addition, the environmental management plans detailed in **paragraph 1.1.12** are to be prepared as part of the CEMP(s) prior to the construction phase.

5. Monitoring and Reporting

5.1. Process for Monitoring, Inspections and Audits

5.1.1. Monitoring and reporting will be undertaken for the duration of the construction phase in order to demonstrate the effectiveness of the requirements and measures set out in the CEMP(s) and related construction controls and allow for corrective action to be taken where necessary.

5.1.2. As part of the monitoring process the designated Environment Manager will be present onsite throughout the construction phase and when new activities are commencing. The Environment Manager will conduct weekly Site inspections, monthly compliance check against the environmental management system including management plans and monitoring. They will also conduct a management system audit in line with the project management plan, engage with senior leadership in line with the project management plan and record assurance activities in line with the contractor's management system; including reporting and analysing data, trends and improvements to the management system.

5.1.3. The Principal contractor will be informed of any deviations from the CEMP as soon as possible following identification of such issues, and if required further follow up will be sought. The Environment Manager would also act as day-to-day contact with relevant local authorities and other regulatory agencies such as the Environment Agency.

5.1.4. During construction, the Environment Manager will conduct walkover surveys to ensure all requirements of the CEMP(s) are being met. Action from these surveys will be documents on an Environmental Action Schedule, discussed with the Site Manager for programming requirements and issued weekly for actioning.

5.1.5. The Environment Manager will also arrange regular formal inspections and audits to ensure the requirements of the CEMP(s) are being met. Details of monitoring, inspection and audits to be undertaken will be provided in the CEMP(s).

5.1.6. After completion of the works, the Environment Manager will conduct a final review.

5.2. Records

5.2.1. Records will be managed through the Quality and Safety Management Systems (QMS) and the Environmental Management System (EMS) of the Principal contractor which will be certified in line with the ISO 14001 standards.

5.2.2. The Environment Manager/Project Manager will retain records of all monitoring, inspections and audits and records related to environmental issues at the Site. Documents shall be stored in a suitable manner and backups created to safeguard the records. These records will include:

- Results of routine Site inspections by Environment Manager/Project Manager;
- Environmental surveys and investigations;
- Environmental Action Schedule;
- Environmental equipment test records;
- Licenses and approvals; and
- Corrective actions taken in response to incidents, breaches of the approved CEMPs or complaints received from a third party.

5.2.3. The CEMPs will be updated if it is necessary to add additional control measures, with a full review as required throughout the construction period. Existing control measures and mitigation will not be amended without prior agreement with North Kesteven District Council.

6. References

- **Ref. 1:** Government (2013), The Waste Electrical and Electronic Equipment Regulations (2013). Available online: https://www.legislation.gov.uk/uksi/2013/3113/contents/made
- **Ref. 2:** CIRIA (2023) C811 Environmental good practice on site guide (fifth edition)
- **Ref. 3:** Regulation (EU) 2016/1628 of the European Parliament and of the Council. Available online: https://www.legislation.gov.uk/eur/2016/1628/article/4.
- **Ref: 4:** British Standards Institution (2012) BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.
- **Ref. 5:** Bat Conservation Trust (2018) Guidance Note 08/18: Bats and artificial lighting in the UK: Bats and the Built Environment series, Institute of Lighting Professionals.
- **Ref.6:** Department for Environment, Food and Rural Affairs (2018). Resources and waste strategy for England. Available online: https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england
- **Ref: 7:** Institute of Air Quality Management (2024) Guidance of the Assessment of Dust from Demolition and Construction (Version 2.2). Available online: [redacted]
- **Ref. 8:** UK Statutory Instruments (2001) (SI 2001/1701), The Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001. Available online: https://www.legislation.gov.uk/uksi/2001/1701/contents

Appendix 1

Outline Site Waste Management Plan (oSWMP)

Application Document Ref: EN010149/APP/7.7
Planning Inspectorate Scheme Ref: EN010149

Springwell Solar Farm

Outline Site Waste Management Plan

APFP Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

EN010149/APP/7.7
November 2024
Springwell Energyfarm Ltd

Table of Contents

1. The Proposed Development

1.1. Introduction and Purpose

1.1.1. This Outline Site Waste Management Plan (oSWMP) is provided as Appendix 1 to the **Outline Construction Environmental Management Plan (oCEMP) [EN010149/APP/7.7].**

1.1.2. This is an outline document that, by reference to the assessments reported in the **Environmental Statement [EN010149/APP/6.1]**, sets out the key elements that will be secured in the detailed Site Waste Management Plan(s) (SWMP) which Springwell Energyfarm Limited (the Applicant) will be required to submit for approval by North Kesteven District Council in consultation with Lincolnshire County Council.

1.1.3. This oSWMP identifies the project obligations with regard to waste legislation. It provides the details regarding roles and responsibilities of the Applicant and its contractors (including any subcontractors) to ensure that the project complies with its waste obligations (under waste legislation such as the Waste (England and Wales) Regulations 2011) and current environmental best practice. This oSWMP should be read in conjunction with the oCEMP.

1.2. Proposed Development

1.2.1. A summary of the description of the Proposed Development can be found in Section 3.1 of the **Environmental Statement (ES) Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1]**. The terminology used in this document is defined in the Glossary **[EN010149/APP/6.1].**

1.3. The Order Limits

1.3.1. The extent of the Solar PV Site, Mitigation and Enhancement Areas, Potential Highway Works Site, Springwell Substation, and Grid Connection Corridor are shown in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]** and are described in full in **ES Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1].** The Proposed Development would be constructed within the Order Limits, within the parameters shown on the **Works Plans [EN010149/APP/2.3]** and in accordance with the **Design Commitments [EN010149/APP/7.4]** and **Project Parameters** detailed in **ES Volume 3, Appendix 3.1 [EN010149/APP/6.3].**

1.4. Scope of this oSWMP

1.4.1. The control and management measures presented in this oSWMP apply to all waste within the Order Limits, unless otherwise stated.

2. Purpose

2.1.1. The Applicant will transmit the details of this oSWMP to the various contractors assisting in the construction and will coordinate with all contractors to ensure their activities remain compliant with the overall environmental and legislative waste requirements.

2.1.2. This oSWMP includes reference to relevant legislation and defines the management responsibilities and procedures that will be in place during the construction phase.

2.1.3. The overall purpose of this oSWMP is to:

- Ensure compliance with all legal and contract requirements for waste management;
- Ensure all the necessary paperwork is collated and stored onsite in accordance with UK regulators;
- Minimise the amount of waste disposal from site by aiming to reduce, reuse waste onsite or recycle;
- Ensure that the requirements are understood by all those involved; and
- Identify roles and responsibilities for management the activities of contractors.

2.1.4. A detailed SWMP will be developed and implemented throughout the construction phase of the Proposed Development. All waste from the site-based works will be dealt with in accordance with Section 34 of the Environmental Protection Act 1990 (Duty of Care), the Waste (England & Wales) Regulations 2011, the Hazardous Waste (England and Wales) Regulations 2005 and any other associated waste regulations. All materials will be handled efficiently, and waste managed appropriately.

3. Legislative and Policy Context

3.1. Overview

3.1.1. This section contains detail of the national legislation as well as regional local waste policy and guidance that has relevance to the Proposed Development.

3.2. National Legislation

Waste Framework Directive

3.2.1. The key European legislation **[Ref. 1]** is the revised Waste Framework Directive (2008/98/EC) (WFD), which consolidates a number of separate waste Directives and amendments. It establishes the basis for the management of wastes across the European Union (EU). It defines certain terms, such as “waste”, “recovery” and “disposal”, to ensure that a uniform approach is taken across the EU. Following the UK withdrawal from the EU, this directive still applies as assimilated law in accordance with the Retained EU Law (Revocation and Reform Act 2023).

Duty of Care

3.2.2. The waste Duty of Care is a legal requirement, originally implemented by Section 34 of the Environmental Protection Act 1990 **[Ref. 2]** and still applicable, to ensure that producers and holders handle their waste safely and in compliance with the appropriate regulations. One of the fundamental aspects of the duty of care requires the holder of waste to make sure that anyone else dealing with their waste has the necessary authorisation to do so. If the holder does not do this and their waste is subsequently found to have been illegally disposed, the holder could be held responsible and may face prosecution. The Duty of Care provisions are contained in the Waste (England & Wales) Regulations 2011 SI 2011 No. 988.

Environment Act 2021

3.2.3. The Environment Act 2021 acts as a framework of environmental protection in the UK, and aims to improve air and water quality, biodiversity and waste reduction. The Environment Act also established the Office for Environmental Protection. The Office for Environmental Protection’s principal function is to contribute to environmental protection and the improvement of the natural environment by holding the UK Government and other public authorities to account.

3.2.4. The Act empowers the government to set long term targets to priority areas – being air, water, biodiversity, resource efficiency and waste –

supported by an Environmental Improvement Plan outlining steps to improve the natural environment over a 15-year period.

3.2.5. Part 3 of the Act focusses upon waste and resource efficiency and empowers Ministers to create regulations to place responsibilities upon producers (known as producer responsibility obligations, or extender producer responsibility). The Act also enables Ministers to create deposit return schemes, to tackle single use items and to improve the segregation – and tracking – of materials.

The Waste Regulations

3.2.6. The Waste (England and Wales) Regulations 2011 SI 2011 No. 988 **[Ref. 3]**, implement the WFD in England and Wales. The waste hierarchy is set out at Article 4 of the WFD. The waste hierarchy requires a demonstration by the producer/holder of a waste that the priority identified in **Table 1** has been considered in order to determine the most suitable waste management option for all waste arisings.

Table 1: The Waste Hierarchy **[Ref. 4]**

Waste Hierarchy	Relevant Activity
Prevention	Using less material in design and manufacture, keeping products for longer, re-use, using less hazardous materials.
Preparing for re-use	The waste is capable of being recycled by existing local or regional waste management facilities without requiring adaptation.
Recycling	Turning waste into a new substance or product, includes composting if it meets quality protocols.
Other recovery	Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat, and power) and materials from waste, some backfilling.
Disposal	Landfill and incineration without energy recovery.

Hazardous Waste Regulations

3.2.7. The Hazardous Waste Regulations **[Ref. 5]** provide the rules for assessing if a waste is hazardous or not as set out under the EU List of Wastes Decision 2000/532/EC. As part of the assessment of waste, hazardous wastes are identified in the European Waste Catalogue (EWC) by an asterisk (*). Some types are classed as hazardous outright (known as absolute entries in the EWC), others require separate assessment dependent upon the concentration of dangerous substances present above threshold concentrations (known as mirror entries in the EWC). The Hazardous Waste Regulations refer to the List of Wastes for the relevant

thresholds for some of the hazardous properties; and to assign the formal description and code for the waste. The regulatory framework to do this is contained in:

- Hazardous Waste (England and Wales) Regulations (SI 2005/ 894) **[Ref. 5]**;
- Hazardous Waste (England and Wales) (Amendment) Regulations (2009 /507) **[Ref. 6]**;
- Hazardous Waste (Miscellaneous Amendments) Regulations (SI 2015/1360) **[Ref. 7]**; and
- Hazardous Waste (England and Wales) (Amendment) Regulations 2016 (SI 2016/334) **[Ref. 8]**.

3.2.8. Following the UK withdrawal from the EU, this legislation still applies as assimilated law in accordance with the Retained EU Law (Revocation and Reform Act 2023).

Environmental Permitting (England and Wales) Regulations 2016

3.2.9. In England and Wales, if you wish to carry out a waste treatment activity on a site, you will need to get a Permit from the Environment Agency or Local Authority. 'Treatment' is considered to be where waste either has a process applied to it – other than simple storage processes like baling or compaction – or where waste from other sites is stored. Some wastes are classified as non-WFD waste. These can be stored and have basic treatment - such as compaction and baling - without an Exemption or Permit to facilitate their onward movement. There is a requirement to check that facilities accepting wastes have a permit to operate and accept the wastes.

Landfill Directive (1999/31/EC)

3.2.10. The Landfill Directive requires reductions in the quantity of biodegradable waste that is landfilled and encourages diversion of non-recyclable and non-usable waste to other methods of treatment. The Landfill Directive remains in place within the UK, following the UK's departure from the EU.

European Union (Withdrawal) Act 2018, European Union (Withdrawal Agreement) Act 2020 and Retained EU Law (Revocation and Reform) Act 2023

3.2.11. On 31 December 2020 the effect of the European Communities Act 1972 (ECA 1972) ceased and no longer serves as a conduit through which the EU can directly affect UK legislation. The EU (Withdrawal) Act 2018 **[Ref. 9]** and EU (Withdrawal Agreement) Act 2020 **[Ref. 10]** provide a framework to ensure the legal position that existed before 31 December

2020 will continue to be preserved by retaining EU law that applies to the UK at that point and bringing it within the UK's domestic legal framework as a new category of law; 'Retained EU Law'. The Retained EU Law (Revocation and Reform) Act 2023 provides for the revocation of specified elements of Retained EU Law and, where not revoked, provides for the assimilation of all remaining Retained EU Law, which is now known as "assimilated law".

3.3. National Policies

Overarching National Policy Statement for Energy

3.3.1. The Overarching National Policy Statement for Energy (EN-1) sets out the Government's policy for resource and waste management of major energy infrastructure. The Government's policy intends to protect human health and the environment by producing less waste and by using it as a resource wherever possible. Where this is not possible, waste management regulation ensures that waste is disposed of in a way least damaging to the environment and to human health. This principle of sustainable waste management is implemented through the waste hierarchy, which sets out priorities that must be applied when managing waste.

Waste Management Plan for England 2013

3.3.2. The Waste Management Plan for England WMPE provides an analysis of the current waste management situation in England and fulfils the mandatory requirements of Article 28 of the revised WFD. The plan does not introduce new policies or change the landscape of how waste is managed in England. Its core aim is to bring current waste management policies under the umbrella of one national plan.

Our waste, Our resources: A strategy for England 2018

3.3.3. This document sets out the UK Government's strategy on how it will preserve the stock of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy, minimise the damage caused to our natural environment by reducing and managing waste safely and carefully, and deal with waste crime. It combines actions to be taken with firm commitments for the coming years and gives a clear longer-term policy direction in line with the UK Government's 25 Year Environment Plan.

3.3.4. The Government's Resources and Waste Strategy sets out plans to improve use of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy. Proposed strategies include:

- *"Improving recycling rates by ensuring a consistent set of dry recyclable materials is collected from all households and businesses"; and*
- *"Work to align the National Planning Policy for Waste and planning practice guidance with the Resources and Waste Strategy and continue to maintain building regulations guidance to support its objectives."*

National Planning Policy Framework, Department for Communities and Local Government 2021

3.3.5. The NPPF sets out the Government's planning policies for England and how these should be applied and should be read in conjunction with the Government's planning policy for waste. The 12 core principles provide policies and guidance for a variety of areas and advocates that planning policies and decisions should apply a presumption in favour of sustainable development.

National Planning Policy for Waste 2014

3.3.6. The National Planning Policy for Waste **[Ref. 11]** refers to the Government's ambition to work towards a more sustainable and efficient approach to resource use and management, identifying opportunities for improvements through driving waste management up the waste hierarchy.

3.4. Guidance

Waste Management Plan for England (2021)

3.4.1. The Waste Management Plan for England **[Ref. 12]** is an important part of transforming how waste and resources are managed, processed, recycled, and disposed of in the most sustainable ways. The Plan includes:

- Extended Producer Responsibility for packaging where a producer's responsibility for a product is extended to the post-use stage;
- promotion of high-quality recycling including the use of material segregation;
- Deposit Return Schemes;
- separate food (bio) waste collections; and
- continue the UK commitment to recover at least 70 percent by weight of non-hazardous construction and demolition waste.

CL:AIRE Code of Practice

3.4.2. The definition of waste and re-use of materials can be complex, CL:AIRE (Contaminated Land: Applications in Real Environments) have produced a

Definition of Waste Code of Practice (DoWCoP) **[Ref. 13]** that can be followed when reusing source segregated aggregate on the Site of production. The DoWCoP covers:

- Ground based infrastructure that is capable of reuse within earthworks projects e.g. road base, concrete floors;
- Source segregated aggregate material arising from demolition activities, such as crushed brick and concrete, to be reused on the Site of production within earthworks projects or as sub-base or drainage materials; and
- Stockpiled excavated materials that include the above.

4. Types of Waste and Waste Forecast

4.1.1. Waste is defined in Article 3(1) of the WFD (2008/98/EC) as, *"any substance or object which the holder discards or intends or is required to discard".*

4.1.2. The wastes generated within the Order Limits and quantity of anticipated waste arisings from the Proposed Development will be confirmed within the SWMP(s). The waste estimated will be formulated from available data upon detailed design of the Proposed Development along with cost estimates.

4.1.3. All waste arising the Proposed Development that fall within the scope of the waste definition will be recorded in the SWMP(s).

4.1.4. The electrical infrastructure, including Solar PV modules, will be manufactured offsite and delivered for installation when required. Therefore, Site construction phase waste is anticipated to be minimal.

4.1.5. Any materials that are generated during construction are likely to include inert construction materials (such as soil, hardcore, rubble), as well as packaging (e.g. wood, metals, composites and plastic) and materials generated during the installation of solar panels (such as wiring, cables, other assorted metals, electrical composites, plastic wrap and mixed wastes). This is also likely to include wastes from Site offices and welfare facilities.

4.1.6. General waste from Site offices and welfare facilities is likely to include:

- Small quantities of oil/grease wastes from the maintenance of construction vehicles;
- Packaging waste from incoming materials; and
- Other waste from construction of fencing, access roads and other supporting infrastructure.

4.1.7. The likely waste to be produced from the operation/maintenance of the Site will be associated with potential equipment/panel replacements and workers carrying out onsite maintenance, which might include packaging, dry recycling, residual waste and potentially food waste.

4.1.8. The anticipated waste streams by activity are summarised in Table 2.

Table 2: Anticipated Waste Streams

Activity	Anticipated Waste Stream	EWC Code
Site preparation and excavation	Excavated soil, organic waste	17 05 04 (soil and stones), 20 02 01 (green waste)
Delivery of Solar PV modules, inverters, other equipment and materials	Pallets, plastic wrap, cardboard boxes, protective foam, metal offcuts, glass	15 01 01 (paper and cardboard) 15 01 02 (plastic) 17 02 02 (glass) 17 04 07 (metals)
Foundation and trenching works	Concrete waste, rebar offcuts, aggregates	17 01 01 (concrete) 17 04 05 (iron and steel) 17 05 04 (soil and stones)
Installation of electrical equipment	Cable cuttings, insulation offcuts	17 04 07 (mixed metals) 17 02 03 (plastic) 17 06 04 (insulation material)
Construction of access roads	Asphalt debris, concrete rubble, gravel waste, bitumen scraps, steel reinforcement offcuts	17 03 02 (bituminous mixtures) 17 01 01 (concrete) 17 05 04 (soil and stones) 17 04 05 (metals)
Use of Site offices and welfare facilities	Food packaging, portable toilet effluent, PPE	20 03 01 (mixed municipal waste) 20 01 25 (edible oil and fat) 20 01 08 (biodegradable waste)
Solar PV module installation	Broken photovoltaic (PV) modules, glass fragments, plastic film, cable reels, cardboard	16 02 14 (discarded equipment) 15 01 02 (plastic) 15 01 01 (paper and cardboard) 17 02 02 (glass)
Construction machinery maintenance	Used motor oil, hydraulic fluid, oil filters, scrap mechanical parts, used lubricants	13 01 10 (mineral-based non-chlorinated hydraulic oils) 13 02 05 (engine oils)

Activity	Anticipated Waste Stream	EWC Code
		16 01 07 (oil filters)
Onsite temporary power generation	Diesel, generator oil, Battery packs	13 02 05 (mineral oils) 16 06 01 (lead batteries) 16 01 07 (oil filters)
Routine maintenance of solar panels and equipment and replacement of parts	Damaged Solar PV modules, metal frames, inverters, obsolete cabling, e-waste	16 02 14 (discarded equipment) 17 04 07 (metals) 20 01 36 (electrical equipment) 16 06 01 (lead batteries)
Vegetation management	Organic wastes, herbicide containers	20 02 01 (green waste) 02 01 08 (agrochemical waste)
End-of-life decommissioning	Decommissioned Solar PV modules, steel structures, cabling waste, e-waste	16 02 14 (discarded equipment) 17 04 07 (metals) 20 01 36 (electronic equipment)

5. Minimisation and Management of Waste

5.1. Overview

5.1.1. The following section details how overarching waste management practices would be undertaken during the Site preparation phase and subsequent construction phases of the Proposed Development.

5.2. Prior to construction works commencing

5.2.1. The type and quantity of waste generated by the Proposed Development will be significantly influenced by the detailed design. By making design decisions at detailed design the generation of waste can be prevented and minimised in the first place.

5.2.2. Decisions at this phase can also positively improve the recycled content and future recyclability.

5.2.3. Design teams and Project Managers will be required to:

- Understand the waste streams that are produced onsite;
- Understand how materials will be reused and recycled; and
- Review at key stages how well design and specification is impacting upon waste management and identify any opportunities for improvement.

5.2.4. At detailed design phase, in order to minimise waste, the following will be considered as a minimum:

- Use of prefabricated and standardised materials wherever possible to reduce waste on site. Many materials can be produced to a specification to reduce the quantity of offcuts;
- The types of materials to be used for the Proposed Development should be considered, with priority given to recycled and reclaimed materials wherever feasible; and
- The provision of accurate design specifications to subcontractors and supply chain teams.

Project Management

5.2.5. Efficient project management is key to reducing the quantity of waste produced on a site and ensuring that any waste produced is managed sustainably and appropriately wherever possible. The following are steps that will be considered by the Site Manager:

- By undertaking work in the correct order, the need for remedial actions will be reduced and as a result the amount of waste produced will also be reduced;
- By determining how materials and waste will be moved around the Site the Site Manager can ensure that waste is disposed of appropriately and that segregation takes place;
- Ensure that all site staff and sub-contractors gain a suitable site induction that includes awareness of good waste management and the specific measures to be used onsite;
- Regular toolbox talks on good waste management can be used to make sure that everyone who comes to site knows how to reduce, re-use and recycle at the Site;
- 'Just-in-time' delivery strategies can reduce waste created by improper storage and weather damage. Therefore, arrange deliveries of materials to align with project construction stages where practicable. This will help avoid materials being stored on site longer than necessary and reduce the risk of damage;
- Check contracts with suppliers and the supplier's haulier for return of packaging. It is often the case that the supplier contract will include a clause for return of packaging, but this is not included in the contract with their haulier. These issues should be identified and resolved as early as possible to prevent problems on site; and
- Consider suppliers that offer reusable packaging schemes.

5.3. Construction and materials and waste management onsite

Waste management routes

5.3.1. The waste hierarchy sets out the priority order that should be considered when managing wastes. A basic representation of the waste hierarchy is provided in **Figure 1** below.

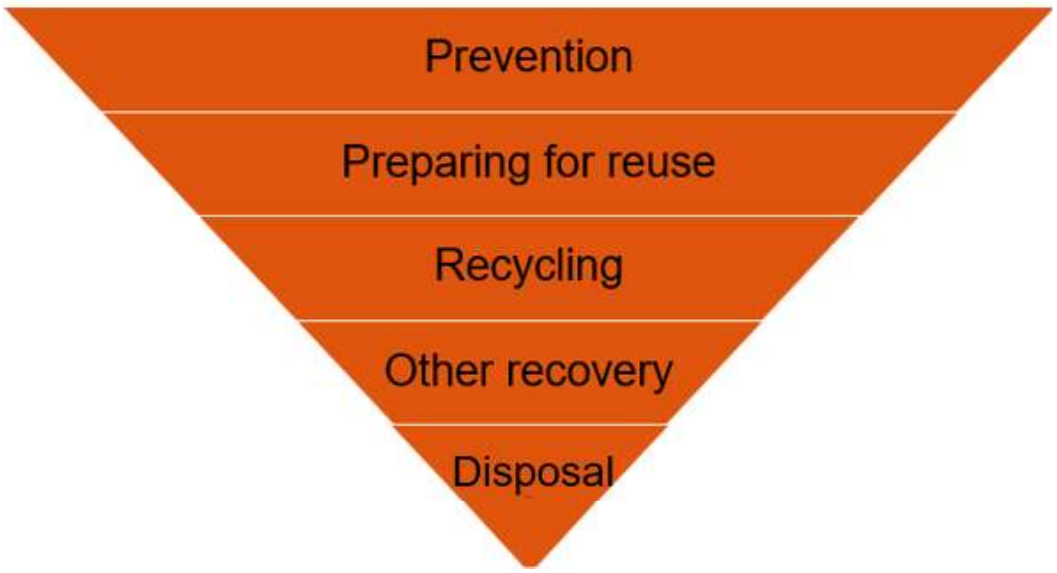


Figure 1: Waste Hierarchy

5.3.2. To reduce the potential impacts from materials and waste and achieve levels of sustainability, the Principal contractor will apply the principles of the Waste Hierarchy and adopt best practice measures which go beyond statutory compliance.

5.3.3. When considering waste management options for the Proposed Development, the Principal contractor will take into consideration the Site's location, natural environment, and available infrastructure. The Principal contractor will consider the following options when determining the preferred waste management option for each waste stream.

6. Prevention and Preparing for Reuse

6.1.1. The Principal contractor will engage with the team or individuals tasked with procurement of materials and services to ensure best practice procedures are employed to prevent residual resources at the Site. A range of good practice measures may include the following:

- Select procurement routes to minimise unnecessary packaging – for example applying 'Just-in-Time' delivery processes to minimise material spoilage;
- Use of 'consolidation centres' to support Just-in-Time delivery – these are strategically-located storage and distribution facilities where materials can be stored prior to Just-in-Time delivery to sites;
- Implement ordering procedures and supply chain systems that avoid waste i.e. no over-ordering, use of take-back schemes for packing, material surplus and offcuts;
- Select procurement routes that minimise unnecessary packaging; and
- Plan the work sequence to reduce potential for onsite residual resource generation.

6.1.2. The following approaches will be implemented, where practicable, to further minimise the quantity of waste arising and requiring disposal:

- Reuse of materials on site wherever feasible, e.g., reuse of excavated soil for landscaping, recycling of demolition materials into aggregates;
- Off-site prefabrication, where practical, including the use of prefabricated elements;
- Segregation of waste at source, where practical, to facilitate a high proportion and high-quality recycling; and
- Offsite reuse, recycling and recovery of materials and waste where reuse on site is not practical, e.g., through use of an offsite waste segregation or treatment facility or for direct reuse or reprocessing offsite.

Recycling

6.1.3. Where site-won generated materials are generated, the aim is to use these materials by recycling them into an alternative form that can be used for construction purposes (for example crushing concrete, brick or other inert wastes to produce aggregate material). By recycling onsite, as far as reasonably practicable, the quantity of waste requiring offsite management is reduced and carbon emissions associated with transport are eliminated.

6.1.4. Recycling may also be achieved by utilising materials with a recycled content, such as recycled aggregates produced off-site.

Recovery

6.1.5. This generally aims to recover energy from waste which cannot be otherwise be reused or recycled. This may include waste materials such as hazardous liquids or solids that can be sent to energy from waste facilities.

6.1.6. Recovery may also include the beneficial use of materials on land for restoration (backfilling operations).

Disposal

6.1.7. The least preferred option in the Waste Hierarchy is a final disposal route such as landfill. Some waste streams will inevitably end up with disposal.

6.1.8. When placing waste disposal contracts, the Principal contractor will consider the implications of long distance travel in terms of health and safety risk, commercial terms and increased emissions from vehicles.

6.1.9. The Landfill Directive requires that disposal sites are classified into one of three categories dependent on the chemical composition of the material; these are hazardous, non-hazardous or inert. The ability for waste to be deposited at these sites would be dependent on the available space and the conditions imposed on the Proposed Development through the relevant licence/permit.

Materials and waste storage and segregation options

6.1.10. The Principal contractor will store excavated soils and earthworks materials onsite in stockpiles until required for use as detailed further in the **Outline Soil Management Plan [EN010149/APP/7.11].**

6.1.11. Construction materials that are stored onsite must be in designated areas that are flat, accessible and secure in order to avoid damage or loss which could render the materials unusable (waste) and require replacement materials to be purchased. Materials must be stored in appropriate conditions to avoid damage through, for example, water ingress or vermin. Materials must be retained in their original packaging to protect them from damage.

6.1.12. The Principal contractor must ensure that the construction Site incorporates designated waste storage areas for skips or similar suitable waste receptacles.

6.1.13. At the waste storage areas, the Principal contractor must segregate waste into the following types as a minimum: inert; wood; metals; packaging; general waste; hazardous solid wastes; hazardous liquid wastes.

6.1.14. The Principal contractor will implement the following waste management procedures where practicable:

- All waste containers must be secure and ensure that no waste is allowed to escape;
- All waste containers must be clearly labelled using a colour coding system so that users know what wastes can be placed in each container. Waste containers must be appropriately colour coded using generic colour codes, an example is shown in **Figure 2** below;
- Lockable storage will be provided for all hazardous waste;
- All waste containers must be sited at least 10m away from watercourses, ditches, and other areas of environmental sensitivity;
- Liquid wastes must be stored in enclosed/ lidded containers and stored within a suitable bunded area, or otherwise provided with secondary containment;
- Separate containers must be provided for each type of hazardous waste;
- Each type of hazardous waste must not be mixed with any other hazardous or non-hazardous waste;
- Sewage from the site offices/ compounds will drain to septic tank and be collected by a suitable specialist waste contractor; and
- Portable toilet facilities on site (portaloos, etc.) must be emptied by the facility provider as per their service agreement.

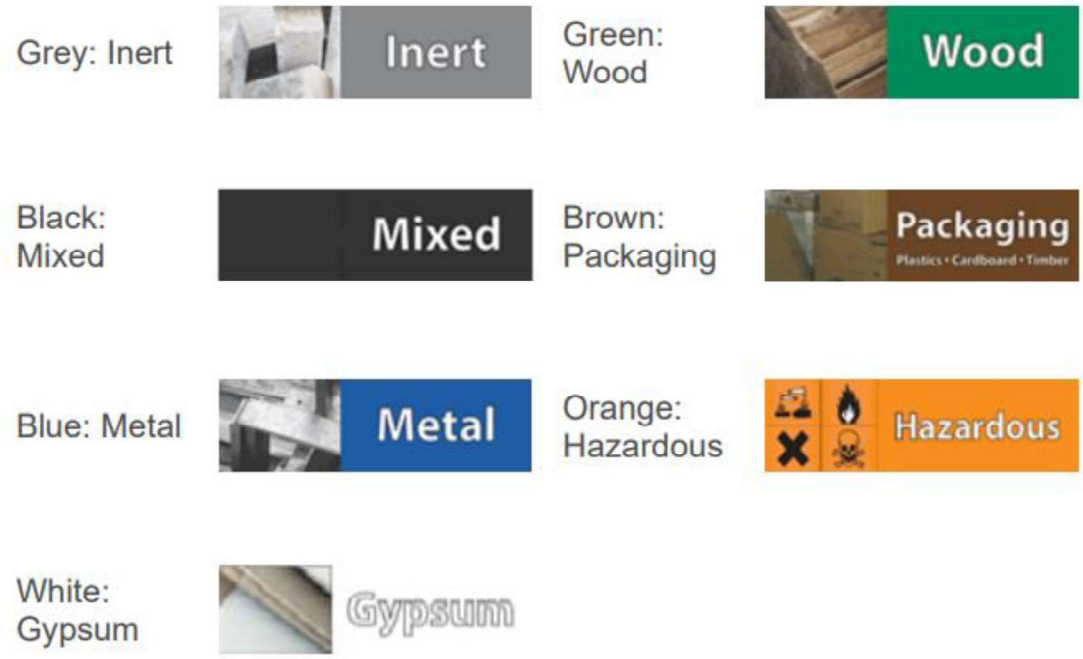


Figure 2: Waste Container Colour Codes **[Ref. 14]**

Waste carriers and facilities

6.1.15. The Principal contractor will manage all waste generated by the Proposed Development in accordance with legal requirements. The Principal contractor must record details of the proposed waste carrier for each waste stream, with Waste Carriers License details appended to the SWMP(s).

6.1.16. The Principal contractor will ensure that the following information is recorded for all waste facilities used (where required and relevant):

- Contractor's name;
- Date(s) of waste removal;
- Type(s) of waste removed (i.e. non-hazardous waste, hazardous waste, inert (specify);
- Method of treatment, recovery or disposal (i.e. reuse, recycling, incineration, landfill etc.);
- Volume or weight of waste removed;
- Recovery rate achieved; and
- Costs associated with waste removal, transport and treatment, including Landfill Tax charges where applicable.

6.1.17. For excavated materials, other than those reused onsite, suitable treatment, recycling and disposal facilities within a reasonable proximity of the Site would be identified by the Principal contractor. For construction and demolition waste, suitable treatment, recycling and disposal facilities within a reasonable proximity of the Site would also be identified by the Principal contractor.

6.1.18. The Principal contractor would further identify and appoint appropriate Waste Carriers and Waste Management Facilities prior to the construction elements of the works commencing. For the purposes of the Proposed Development, the transportation of material resources and waste arisings would take place by road and rail. Waste Carriers and Waste Management Facilities will be confirmed within the SWMP(s).

Waste Transfer Notes

6.1.19. The Principal contractor must ensure that all movements of waste from site are accompanied by a waste transfer note (WTN), which will detail specific information. The Principal contractor's Site Materials and Waste Manager or another competent person will check that each WTN contains the following (where required and relevant):

- The name of the person receiving the waste and what they are authorised to do with that waste as a Registered Waste Carrier can only transport waste;
- Type of waste;
- The Standard Industrial Classification (SIC) code;
- The six-digit EWC code;
- Address of the producing site and details of the waste producer;
- Waste carrier's details including registration number;
- Quantity of waste;
- How it is contained (e.g. 8 cubic yard skip);
- Address of the receiving site (e.g. landfill) and the Environmental Permit or Exemption No. associated with the receiving site;
- The date to which the WTN applies;
- If the material is non-hazardous waste and it is destined for disposal directly to landfill, pre-treatment must have been applied and a declaration detailing the treatment applied appended to the WTN; and
- A declaration that the waste has been treated in line with the requirements of the waste hierarchy.

6.1.20. The Site representative signing the WTN must ensure all WTNs are placed in the Site Waste Management File and kept for a minimum period of two years for non-hazardous waste.

6.1.21. By signing a WTN, the site representative is confirming that all the details are correct and that the material is to be sent by a licensed waste carrier to a suitably licensed receiving site, permitted to receive that type of waste. The signature completes the WTN as a legal document.

6.1.22. The Site Materials and Waste Manager or other competent person signing the WTN must additionally ensure that the Waste Carrier is using a suitable vehicle with adequate, covered containment for the waste.

Waste Consignment Notes (Hazardous Waste)

6.1.23. The Principal contractor must ensure that a Hazardous Waste Consignment Note (HWCN) is completed for every movement of hazardous waste. The HWCN must be prepared before the waste is moved. Prior to signing, the Site Materials and Waste Manager or another competent person must ensure that the HWCN includes:

- Hazardous Waste Premises Code;
- Consignment note code;
- SIC Code;
- Name and address of the site from which the waste is being moved;
- Date of removal;
- Type of waste produced, including the quantity and the EWC code;
- The name of the person who is receiving the waste and what they are authorised to do with that waste (e.g. registered waste carrier can only transport waste);
- The final disposal site that is authorised to accept the waste; and
- Retention period for hazardous waste.

6.1.24. The Principal contractor must retain a copy of the HWCN for a minimum of three years.

Waste documentation

6.1.25. The Principal contractor must retain all waste documentation at the Primary Construction Compound (s) and, following completion of construction, at the Principal contractor's head office. This includes:

- The SWMP (two years after end of construction);

- Waste transfer documentation (two years for WTNs and three years for HWCNs);
- Copies of any exemptions or permits; and
- Copies of waste carrier and treatment/disposal Site licences or permits.

Fuels, Oils and Control of Substances Hazardous to Health (COSHH) Materials

6.1.26. The Principal contractor must establish appropriate control and management measures for the storage, dispensing, containment and use of all fuels, oils and COSHH materials and wastes that will be required during construction.

6.1.27. The storage, dispensing, containment and use of fuels, oils and COSHH materials have the potential to cause significant damage to the environment. Causes of environmental incidents linked to fuel, oil and COSHH materials on construction sites include:

- Delivery and use of materials;
- Overfilling of storage containers
- Plant or equipment failure;
- Containment failure;
- Accidents and vandalism; and
- Mixing of inappropriate materials and wastes.

6.1.28. The storage, dispensing, containment and use of all fuels, oils and COSHH materials and wastes shall be undertaken in accordance with regulatory and good practice guidance, the key points of which are set out below.

6.1.29. For COSHH materials and waste, relevant control and management measures may include:

- Storage must be in a secure, bunded and sheltered area;
- Waste must be segregated;
- COSHH liquids must not be stored in areas within Flood Zone 3;
- Areas must be supervised, and records of materials and waste stored and removed from the area recorded; and
- The handling, storage and disposal must be undertaken as described in the COSHH Assessment and any Material Safety Data Sheet (MSDS).

6.1.30. Fuel and oil (including mould oil) shall be stored in accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001 **[Ref. 15]**, with fuels and oil handled in such a way that risk of pollution is minimised.

Waste management proposals during the operation (including maintenance) phase

6.1.31. The Proposed Development is anticipated to generate Waste Electrical and Electronic Equipment (WEEE) through operation and maintenance. As such, these will be recovered and recycled by an authorised reprocessor as required by the WEEE Regulations 2013. To ensure that this is done to "Best Available Treatment Recovery and Recycling Techniques", a list of up-to-date authorised reprocessors should be established prior to the operational phase of the Proposed Development, and kept up to-date throughout the operation phase of the Proposed Development.

6.1.32. Electrical waste will be disposed of per the Waste from Electrical and Electronic Equipment (WEEE) Regulations, minimising the environmental impact of replacing any elements of the Proposed Development.

6.1.33. An **Outline Operational Environmental Management Plan (oOEMP) [EN010149/APP/7.10]** is submitted as part of the DCO application. It outlines that a SWMP will be prepared and agreed with the authority prior to commencement of the operation (including maintenance) phase. Any waste generated from operation and maintenance will be managed in accordance with the site management plans, and ultimately, the requirements of the **oOEMP [EN010149/APP/7.10]** and SWMP.

Waste management proposals during the decommissioning phase

6.1.34. As the lifespan of the Proposed Development would be 40 years per phase, it is not possible (at this stage) to identify the waste management routes or specific waste facilities to be utilities during the decommissioning of the Proposed Development.

6.1.35. An **Outline Decommissioning Environmental Management Plan (oDEMP) [EN010149/APP/7.13]** is submitted as part of the DCO application. It outlines that a SWMP will be prepared and agreed with the authority prior to commencement of the decommissioning phase. Any waste generated from decommissioning at the end of life will be managed in accordance with the site management plans, and ultimately, the requirements of the **oDEMP [EN010149/APP/7.13]** and SWMP.

7. Monitoring

7.1. Overview

7.1.1. The following section details how overarching waste management practices would be undertaken during the construction phases of the Proposed Development.

7.2. Roles and responsibilities

7.2.1. Different members of the construction team will have specific roles and responsibilities identified in Error! Reference source not found.**3** below. The roles and responsibilities will be confirmed in the SWMP.

Table 3 : Roles and responsibilities

Position	Roles	Responsibilities
The Applicant	• Promote waste minimisation • Drive good practice within the team • Ensure hazardous waste identified prior to construction	• Duty of Care • Best Practice • Identification of waste reduction opportunities
Project Manager/Director (Principal contractor)	• Overall responsibility for legal compliance. Responsible for providing appropriate resources in the team including competent staff, training and resources	• Health and Safety • Duty of Care
Site manager (Principal contractor)	• Develop, implement and communicate a detailed site specific SWMP for each phase • Review the SWMP for each phase and manage and monitor its implementation • Work with design team • Ensure segregation of waste materials • Designate and facilitate on site storage compounds / treatment areas • Ensure appropriate waste storage • Keep proper records of all waste produced / re-used / sent off-site • Ensure appropriate off site transport of waste and confirm destination of all waste leaving site. • Reduce waste being brought on to site (packaging)	• Health and Safety • Development of a site-specific SWMP for each phase • Management of onsite processes and programme • Hazardous waste identification and management • Duty of Care record keeping
Sub-Contractors	• Develop method statements for works onsite • Liaise with Main Contractor to ensure they understand and comply with the Site waste plan/strategy	• Duty of Care • Production of method statements • Appropriate management of

Position	Roles	Responsibilities
		activities under direct control • Ensure that wastes are segregated

7.3. Records

7.3.1. Records of all waste movements offsite will be retained by Site management for the required time and these records will outline how waste was managed and demonstrate compliance with Duty of Care with respect to construction waste.

7.3.2. Opportunities for the illegal disposal of waste will be significantly reduced by ensuring compliance with existing legal controls and providing a full audit trail of waste removed from the construction Site.

7.4. Site inspections

7.4.1. Regular inspection and audit of all waste management records and activities on site will be undertaken to ensure that the relevant legislation and any good practice measures outlined within this oSWMP are complied with. Inspections and audits will be arranged by management teams at appropriate intervals and records of these inspections and audits will be retained. Frequency of inspections and audits will be detailed within the SWMP(s).

7.5. Review of SWMP

7.5.1. The Principal contractor must review the SWMP(s) frequently during the construction of the Proposed Development to ensure that targets are being achieved and that realistic solutions are provided for unplanned events of abnormal wastes. The Principal contractor must also review the SWMP if there is any significant change to the Proposed Development. This review will involve the completion and submission of a monitoring report to the Application (or its representative) in an agreed format.

7.6. Training

7.6.1. The Principal contractor will incorporate the SWMP requirements into the site induction and training procedures and must provide onsite instruction of appropriate construction materials and waste separation, handling, recycling, reuse and return methods to be used by all parties at all appropriate stages during the construction of the Proposed Development. The Principal contractor must ensure that all personnel working on the Site, including sub-contractors, are inducted and appropriately trained.

7.7. Review and update

7.7.1. The detailed SWMP will remain a live document and will be used to describe the progress onsite against waste management forecasts also to be developed alongside this plan. This will also allow for any changes to the works or to accommodate new legislative requirements. An overall internal compliance audit will be undertaken routinely, and a report generated for management record. The detailed SWMP plan will be reviewed and updated as appropriate to record details of the different types and quantities of wasted resulting from the works.

8. Implementation

8.1.1. The SWMP(s) will set out all roles, responsibilities and actions required in respect of implementation of the measures described within this oSWMP, including:

- An organogram showing team roles, names and responsibilities;
- Training requirements for relevant personnel on environmental topics;
- Information of onsite briefings and Toolbox Talks that will be used to equip relevant staff with the necessary level of knowledge of appropriate construction materials and waste separation, handling, recycling, reuse and return methods to be used by all parties;
- Procedures for monitoring, Site inspections and audits, and key performance indicators;
- Document control, including any waste transfer documentation, permits, or and exemptions, and waste carrier and treatment/disposal site licences or permits;
- Design decisions made in order to reduce materials consumption and/or waste generation during construction of the Proposed Development;
- The types and amounts (volume or weight) of waste to be generated, and how this is measured;
- How the waste generated will be managed and opportunities for waste minimisation, reuse, recycling and recovery in line with the requirements of the waste hierarchy;
- Details of Waste Carriers and Waste Management Facilities to ensure waste is managed legally and responsibly in accordance with the requirements of this document.

9. References

- **Ref. 1:** European Parliament and Council of the European Union, (2008); Directive 2008/98/EC of The European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives. Available online. [redacted]
- **Ref. 2:** Her Majesty's Stationery Office, (1991); The Environmental Protection (Duty of Care) Regulations 1991. Available online. The Environmental Protection (Duty of Care) Regulations 1991 (legislation.gov.uk)
- **Ref. 3:** Her Majesty's Stationery Office, (2011); The Waste (England and Wales) Regulations 2011. Available online. The Waste (England and Wales) Regulations 2011 (legislation.gov.uk)
- **Ref. 4:** Department for Environment, Food & Rural Affairs (DEFRA), (2011); Guidance on applying the Waste Hierarchy. Available online : [redacted]
- **Ref. 5:**Her Majesty's Stationery Office, (2005); The Hazardous Waste (England and Wales) Regulations 2005. Available online. The Hazardous Waste (England and Wales)Regulations 2005 (legislation.gov.uk)
- **Ref. 6:** Her Majesty's Stationery Office, (2009); The Hazardous Waste (England and Wales) (Amendment) Regulations 2009. Available online. The Hazardous Waste (England and Wales) (Amendment) Regulations 2009 (legislation.gov.uk)
- **Ref. 7:** Her Majesty's Stationery Office, (2015); The Hazardous Waste (Miscellaneous Amendments) Regulations 2015. Available online. The Hazardous Waste (Miscellaneous Amendments) Regulations 2015 (legislation.gov.uk)
- **Ref. 8:** Her Majesty's Stationery Office, (2016); The Hazardous Waste (Amendment) Regulations 2015. Available online. The Hazardous Waste (England and Wales) (Amendment) Regulations 2016 (legislation.gov.uk)
- **Ref. 9:** Her Majesty's Stationery Office, (2018); European Union (Withdrawal) Act 2018. Available online. European Union (Withdrawal) Act 2018 (legislation.gov.uk)
- **Ref. 10:** Her Majesty's Stationery Office, (2020); European Union (Withdrawal Agreement) Act 2020. Available online. European Union (Withdrawal Agreement) Act 2020 (legislation.gov.uk)
- **Ref: 11:** Department for Communities and Local Government, (2014); National Planning Policy for Waste. Available online:

https://assets.publishing.service.gov.uk/media/5a7ef594e5274a2e8ab4946c/141015_National_Planning_Policy_for_Waste.pdf.

- **Ref. 12:** DEFRA, (2021); Waste Management Plan for England. Available at: https://www.gov.uk/government/publications/waste-management-plan-for-england.
- **Ref. 13:** Contaminated Land: Applications in Real Environments, (2011); The Definition of Waste: Development Industry Code of Practice.
- **Ref. 14:** Mohamed Youssef, (Undated); Tool Box Talk Waste Segregation. Available online. [redacted]
- **Ref. 15:** UK Government (2001), The Control of Pollution (Oil Storage) (England) Regulations 2001. Available online: https://www.legislation.gov.uk/uksi/2001/2954/contents.

Appendix 2

Cabling and Grid Connection Method Statement

Application Document Ref: EN010149/APP/7.7
Planning Inspectorate Scheme Ref: EN010149

Springwell Solar Farm

Cabling and Grid Connection Method Statement

APFP Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

EN010149/APP/7.7
November 2024
Springwell Energyfarm Ltd

Table of Contents

1. Introduction

1.1. Purpose of this document

1.1.1. National Policy Statement for Renewable Energy Infrastructure (EN-3) states that in the case of underground cabling, applicants are expected to provide a method statement describing cable trench design, installation methodology, as well as details of the operation and maintenance regime.

1.1.2. This method statement provides this by describing how the Grid Connection Corridor and internal cable corridors for Springwell Solar Farm are proposed to be constructed, operated and maintained.

1.1.3. The components described, as set out in Schedule 1 of the **Draft Development Consent Order (DCO) [EN010149/APP/3.1]** comprise:

- Grid Connection cable (Work No. 5);
- Internal connection cables (Work No. 6); and
- Access points, construction compounds and haul routes (Work No. 8, Work No. 7, and further associated development within the Order Limits).

2. Grid Connection and Internal Cable Corridor Description

2.1. Grid Connection Corridor

2.1.1. The electricity generated by the Proposed Development will be exported to the National Grid via up to two 400kV cable circuits each comprised of three buried cables from the Springwell Substation to the proposed National Grid Navenby Substation. The total length of the Grid Connection Corridor is approximately 2.8km. The Grid Connection Corridor is within the Order Limits.

2.1.2. The Grid Connection Corridor crosses minor roads and a Public Right of Way as described in **Table 1** below and detailed in **Schedule 4 of the Draft DCO [EN01049/APP/3.1]** and the **Streets, Rights of Way and Access Plans [EN010149/APP/2.4].**

Table 1: Grid Connection Corridor Crossings

Crossing	Approximate distance from Springwell Substation (km)
Gorse Hill Lane	0.4
PRoW – TEMP/2/1	1.3
Heath Lane	1.8

2.2. Internal Cable Corridors

2.2.1. The Proposed Development also includes internal cable corridors (at 33kV or 66kV) to transfer electricity from areas within the site to the Springwell Substation. The number of cables within each corridor will vary depending on how much electricity is being transferred in each corridor.

2.2.2. The internal cable corridors cross roads as described in **Table 2** and detailed in **Schedule 4 of the Draft DCO [EN01049/APP/3.1]** and the **Streets, Rights of Way and Access Plans [EN010149/APP/2.4].** Road crossing points are also shown on **ES Volume 2, Figure 3.9: Indicative Cable Crossings [EN010149/APP/6.2].**

Table 2: Internal Cable Corridor Crossings

Crossing	Location
B1188	North of Scopwick
B1191 (Heath Road)	North of RAF Digby

B1191 (Heath Road)	South of RAF Digby
B1191 (Heath Road)	Between Bloxham Woods and A15
Navenby Road	Between B1191 (Heath Road) and A15
Temple Road	West of junction with A15
A15	South of Ashby Lodge
A15	North of Toll Bar Cottages
Thompson's Bottom Farm Lane	East of Thompson's Bottom Farm
Thompson's Bottom Farm Lane	West of junction with A15

2.2.3. Internal cable corridors will also cross buried utilities and PRoWs at locations that will be determined at the detailed design stage once consent has been granted. The detailed design of the Proposed Development will be approved by the relevant planning authority pursuant to Requirement 5 of the **Draft Development Consent Order [EN010149/APP/3.1].** Discussions and agreements have been made with Statutory Undertakers relevant to the known utilities within the Order Limits as per the Statements of Common Ground and the Protective Provisions included within the Application. Further discussions and agreements will be made in advance of any work starting on the relevant areas of Site.

3. Methodology

3.1.1. The Grid Connection Corridor and the internal cable corridors are expected to use both open trench and horizontal directional drilling (HDD) installation techniques. Open trench is expected to be used for the majority of the corridor installation, e.g. through open fields. Either open trench or HDD will be used for corridor crossings of roads, environmental receptors (including water courses and ditches) and other existing below-ground utilities infrastructure.

3.1.2. The technique for road crossings will be agreed with the local highway authority as described in the **Outline Construction Traffic Management Plan [EN010149/APP/7.8].**

3.1.3. The technique for crossing other infrastructure such as buried utilities will be agreed at the detailed design stage with the relevant infrastructure operator, in accordance with the schedule of protective provisions in the **Draft Development Consent Order [EN010149/APP/3.1].**

3.1.4. The technique for crossing environmental receptors will be determined at the detailed design stage, based on the latest environmental survey data available at the time, in order to minimise environmental impact while installing the crossing in a safe and practicable manner.

3.1.5. The Applicant recognises that there are multiple stakeholders for each crossing, and will engage with these stakeholders to ensure their requirements are incorporated at the right time to inform design and site works.

3.2. Open Cut Trenching

3.2.1. Open cut trenches will be excavated by a mechanical excavator or by manual means in areas where mechanical excavation is not possible or existing utilities are identified. The trench width and depth will be dictated by the number of cables at that location, separation distances, ground conditions, cable jointing pits and detailed design specifications, within the maximum assumptions defined in **ES Volume 3, Appendix 3.1: Project Parameters [EN010149/APP/6.3].** Excavated soil will be temporarily stored to form separate bunds of top and sub soil, parallel to and at a safe distance from the length of the excavated trench.

3.2.2. The Grid Connection Corridor trench will require approximately 5 jointing pits along the length of the corridor, in areas where open cut trenches are used. The number of jointing pits will be determined at the detailed design stage. The jointing pits will be constructed of formed concrete, to allow operational maintenance access for the Proposed Development. Internal cable corridors are not expected to require jointing pits.

3.2.3. Open cut trenches will have a suitable bedding material or cable duct installed prior to the cable being pulled into position. Once the cable or ducts are in position and jointing has been completed and tested, the trench will be backfilled with the excavated materials and warning tapes, protection tapes or protection tiles installed as detailed design specifies above the cables or ducting.

3.2.4. Indicative cross-sections for open cut cable trenches are shown in **ES Volume 2, Figure 3.8: Indicative Cable Trench Sections [EN010149/APP/6.2].**

3.3. Horizontal Directional Drilling (HDD)

3.3.1. The HDD locations will require the establishment of launch and receptor temporary compounds as well as launch and receptor pits. The HDD temporary compounds will be enclosed with suitable fencing or acoustic screening for the duration of the drilling activity, if located next to sensitive receptors.

3.3.2. The size of the temporary HDD compound and drilling rig will be dictated by several factors including the length, diameter, number of the drills and the soil conditions.

3.3.3. Excavated soil from the launch and receptor pits will be temporarily stored to form separate bunds of top and sub soil near to or in the compound area, for use in backfilling following the duct and cable installation and to reinstate the HDD temporary compound areas.

3.3.4. An indicative cross-section for a typical HDD crossing under a road is shown in **Annex 1.**

3.3.5. An indicative layout for HDD launch pit and reception pit compounds is shown in **Annex 2.**

3.4. Access Points and Haul Route

3.4.1. During construction, access points off Gorse Hill Lane and Heath Lane will be used for access/egress to all areas of the Grid Connection Corridor. Multiple access points will be used for construction of the internal cable corridors. Access points are shown on **Streets, Rights of Way and Access Plans [EN010149/APP/2.4].**

3.4.2. For construction of the Grid Connection Corridor, temporary access tracks will be installed within the corridor. These tracks will be built either using a hard core base topped with crushed stone or where possible using temporary trackway to minimise ground disturbance.

3.4.3. Construction of the internal cable corridors will use either the internal access tracks that will be built for other elements of the Proposed Development, or temporary tracks in areas where there are no other elements of the Proposed Development. Temporary tracks will be built either using a hard core base topped with crushed stone or where possible using temporary trackway to minimise ground disturbance.

3.4.4. Access tracks will be installed as described in **ES Chapter 3: Proposed Development Description [EN010149/APP/6.1]** and the **Design Commitments [EN010149/APP/7.4].**

3.5. Crossings

3.5.1. Where cable corridors cross roads using open trenching or HDD, the crossing installation will adopt appropriate traffic management measures as described in the **Outline Construction Traffic Management Plan [EN010149/APP/7.8].**

3.5.2. Where cable corridors cross public rights of way, crossing points will be managed to ensure user safety and minimise disruption, as described in the **Outline Public Rights of Way and Permissive Path Management Plan [EN010149/APP/7.12].**

3.5.3. Where cable corridors cross existing hedgerows / vegetation (including water courses and ditches), the crossing installation will either be by open cut or HDD methodology. Locations of proposed vegetation removal to facilitate cable corridors (as well as access tracks) are shown in **ES Volume 2, Figure 3.11: Vegetation Removal Parameters [EN010149/APP/6.2].**

3.6. Connection to National Grid Navenby Substation

3.6.1. The Grid Connection Corridor will connect to the allocated generator bay within the National Grid Navenby Substation. It is expected that some works will be needed within the boundary of National Grid Navenby Substation, as described in the **Grid Connection Statement [EN010149/APP/7.6].**

4. Equipment

4.1. Open trench equipment

4.1.1. Equipment expected to be used for open cut trenching includes:

- Articulated HGVs for delivery of plant, cable, and other materials;
- Beavertail lorries;
- Excavators;
- 8-wheeler tipper trucks;
- Dumper trucks;
- Telehandlers;
- Concrete mixer trucks, for 400kV jointing pits;
- Cable drums and winches;
- Tractors;
- Staff vans or minibuses.

4.2. HDD equipment

4.2.1. Equipment expected to be used for HDD cable installation includes:

- Articulated HGVs for delivery of plant, cable, and other materials;
- Beavertail lorries;
- Excavators;
- 8-wheeler tipper trucks;
- Dumper trucks;
- Telehandlers;
- HDD rig;
- Water tanks;
- Mud mixing tank;
- Cable drums and winches;
- Tractors;
- Staff vans or minibuses.

5. Construction

5.1. Construction activities

5.1.1. Expected construction activities include:

- Establishment of accesses and temporary access tracks;
- Stripping of topsoil in sections;
- Trenching in sections;
- Appropriate storage and capping of soil;
- Laying of bedding material;
- Sectionalised approach of cable and duct installation;
- Backfilling of trenches with retained soil;
- Excavation and installation of jointing pits (for the Grid Connection Corridor);
- Cable joint installation;
- Cable pulling;
- Installation of HDD launch and reception compounds;
- Drilling of HDD crossings;
- Testing and commissioning;
- Reinstatement including removal of temporary access tracks and HDD compounds.

5.2. Management of spoil

5.2.1. During construction of the Grid Connection Corridor and the internal cable corridors, spoil will be managed as described in the **Outline Soil Management Plan [EN010149/APP/7.11].**

5.3. Construction compounds

5.3.1. The Grid Connection Corridor will be constructed using the Primary Construction Compound located to the south of Gorse Hill Lane. The internal cable corridors will be constructed using this compound and the other Primary and Secondary Construction Compounds that form part of the Proposed Development. Construction Compound locations are indicated on **ES Volume 2, Figure 3.10: Location of Primary and Secondary Construction Compounds [EN010149/APP/6.2]** and in the **Works Plans [EN010149/APP/2.3].**

5.4. Construction programme

5.4.1. The construction of the Proposed Development is expected to take place in two phases. The construction of the Grid Connection Corridor will take place during the first phase of construction, while the construction of the internal cable corridors will take place across both phases. Indicative construction phasing is outlined in **ES Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1].**

6. Operation

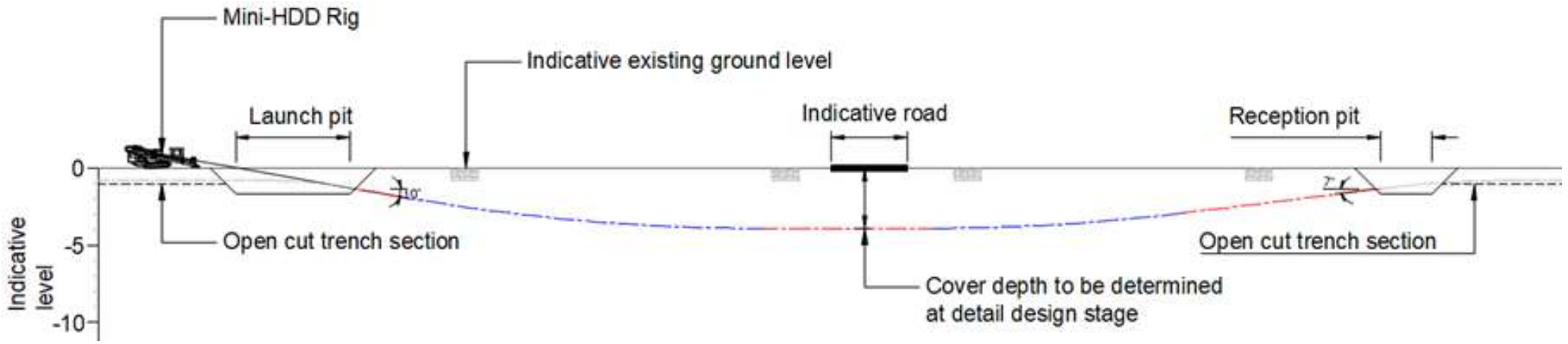
6.1.1. The cables in the Grid Connection Corridor and internal cable corridors will be subject to ongoing monitoring during operation. This would include periodic access to the jointing pits on the Grid Connection Corridor for inspection purposes and to carry out any work required to maintain the bays in good condition.

6.1.2. If cable faults develop, temporary access tracks will be re-established to allow the necessary vehicles and equipment to access to the relevant locations. Temporary excavations and pits will be put in place to access the affected cables and allow repair or replacement. Once works are completed, excavations will be backfilled and temporary tracks removed.

Appendix 2 - Cabling and Grid Connection Method Statement

Annex 1 Indicative HDD cross-section

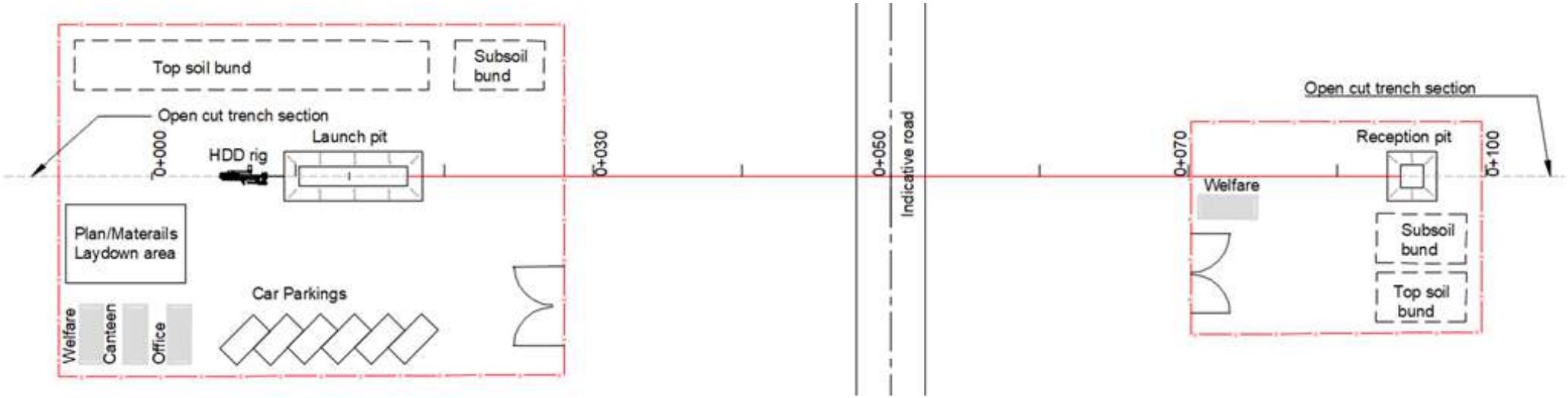
Annex 1 – Indicative HDD cross-section



Appendix 2 - Cabling and Grid Connection Method Statement

Annex 2 - Indicative HDD layout

Annex 2 – Indicative HDD layout



Appendix 3
HDD Fluid Breakout Plan

Application Document Ref: EN010149/APP/7.7
Planning Inspectorate Scheme Ref: EN010149

Springwell Solar Farm

HDD Fluid Breakout Plan

APFP Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

EN010149/APP/7.7
November 2024
Springwell Energyfarm Ltd

Table of Contents

1. Introduction

1.1. Purpose of this document

1.1.1. The Proposed Development may make use of Horizontal Directional Drilling (HDD) techniques for cable crossings of roads or other features.

1.1.2. This document describes the approach that will be taken to manage the risk of HDD fluid breakout where HDD techniques are used.

1.1.3. A detailed site-specific breakout plan for each crossing will be developed by the HDD contractor prior to any HDD works being undertaken.

1.2. Use of drilling fluid

1.2.1. Horizontal Directional Drilling (HDD) uses a drilling fluid to perform the following functions:

- To remove cuttings from in front of the drill bit;
- Power the mud motor;
- To transport cuttings from the drill face towards the surface;
- Lubricate the drill string;
- Cooling the cutting tools;
- Borehole stabilization; and
- Creation of a filter cake against the wall of the hole to minimize the risk of loss of drilling fluid or influx of groundwater penetration into the borehole.

1.2.2. HDD drilling fluid primarily comprises bentonite (clay) mixed with water, with additives to control its rheological properties. The bentonite is typically delivered to site as a dried powder and is mixed on site in a temporary mix tank with water and additives.

1.2.3. Fluid breakout refers to drilling fluid escaping from the borehole, either to the surface or under the surface (e.g. into voids or high permeability ground). When breakout occurs, the fluid is not fully circulating back to the surface and will not be performing one of its major functions i.e. removal of cuttings from the borehole which can result in stuck or lost drilling equipment.

2. Fluid Breakout Risk

2.1. Breakout to surface

2.1.1. Drilling fluid can sometimes break out of the borehole as a result of the nature of the ground e.g. in the presence of highly fissured clay, gravels or where there are large interconnected fissures in the ground. Breakouts may also occur where manmade features are present (e.g. old boreholes). Surface breakout most commonly occurs close to the entry point due to the drill being shallow and not yet at the optimum drill depth.

2.1.2. Breakout of drilling fluid from the borehole is only likely to reach ground level where there is a continuous path available to the surface.

2.1.3. Monitoring of the surface above the borehole and of the volume of fluid returning to the entry pit can be used to identify a loss of fluid as result of breakout. Mitigation measures are discussed in **Section 3.**

2.2. Breakout to voids

2.2.1. During drilling in ground with high permeability (e.g. peat) or voids (e.g. chalk) drilling fluid can be lost to the ground without reaching the surface.

2.2.2. If fluid is lost to the ground, the volume of fluid returning to the surface will reduce and will be identified by monitoring levels in the mud (fluid) tanks. Mitigation measures are identified in **Section 3.**

3. Fluid Breakout Mitigation

3.1.1. Mitigation to reduce the risk and impacts of fluid breakout are described below.

3.2. Design

3.2.1. A specific design of each HDD crossing will be carried out, including:

- Appropriate ground investigation (GI) of the location;
- Intended drill path in relation to the identified ground conditions;
- Hydro fracture analysis and calculation; and
- Drilling fluid viscosity and properties selection suitable for the identified ground conditions.

3.2.2. A risk assessment and contingency plan will be developed to identify site-specific breakout risks and actions to be taken to minimise the impact of any breakout that occurs.

3.3. Monitoring

3.3.1. Monitoring activities to reduce the risk of breakout during drilling will be defined in the detailed CEMP, which will be produced in in line with this oCEMP. Monitoring activities are expected to include:

- Monitoring of the volume of fluid returning to the entry pit – a decrease in volume may indicate a loss of fluid i.e. breakout;
- Downhole annular pressure monitoring to monitor actual pressure against the theoretical pressure identified in the hydro fracture analysis – elevated pressure may indicate a blocked borehole and an increased risk of breakout; and
- Regular inspections of the surface above the drill route to check for any signs of surface breakout.

3.3.2. If monitoring indicates a risk of breakout occurring, operators will take action accordingly, e.g. cleaning the borehole, reducing the fluid pressure, reducing the drill penetration rate.

3.3.3. If surface or void breakout occurs, drilling will be stopped. Fluid from any surface breakout will be cleaned up as described in **Section 4.**

3.4. Recording

3.4.1. The HDD contractor will keep records of the drilling process. Details will be determined based on the detailed design of each HDD crossing but these records are expected to include data on drill direction and position, rate of

penetration, downhole annular pressure and records of equipment used and activities carried out.

3.4.2. As well as being good practice, recording and reporting of key data as described above is expected to help identify whether actual results are in line with design expectations and allow adjustments to be made as work progresses to minimise the risk of fluid breakout.

4. Breakout Clean Up

4.1.1. In the event of surface or void breakout of the drilling fluid, drilling operations will be stopped. This will reduce fluid pressure and stop further fluid from reaching the surface or further loss of fluid into the ground.

4.1.2. The contingency plan developed at detailed design will define the activities to be carried out to deal with the breakout. This is expected to comprise:

- Confirm whether surface breakout has occurred;
- If surface breakout has occurred;
- Confirm surface location(s) of breakout;
- Confirm scale of breakout in terms of area affected and approximate volume of fluid;
- Containment of the fluid with appropriate materials (e.g. silt fences, straw bales, sand bags, temporary bunds) to minimise the affected area;
- Removal of the fluid by hand or pumping, with return of the recovered fluid to the drilling compound for reuse or subsequent disposal;
- Removal of any remaining deposits by hand;
- Removal of temporary containment materials or bunds;
- Appropriate restoration of surface areas affected by breakout or the containment works.

4.1.3. The HDD contractor will have necessary equipment on site (e.g. silt fencing, sand bags, pumps) to allow the defined containment and clean-up methodology to be implemented rapidly if needed.

4.1.4. For either surface or void breakout, and prior to drilling restarting, the causes of the breakout will be reviewed and the drilling methodology adjusted (if appropriate) to minimise the risk of reoccurrence.

Springwell
Solar Farm

springwellsolarfarm.co.uk

Application Document Ref: EN010149/APP/7.7
Planning Inspectorate Scheme Ref: EN010149