



Pennant Walters

GLANLLYNFI GARTH WIND FARM

Draft Environmental Statement

Appendix 4A - Outline Construction Environmental Management Plan





Pennant Walters Ltd

Glanllynfi Garth Wind Farm

Outline Construction Environmental Management Plan
(CEMP)



July 2026

Report for

Meryl Lewis

Pennant Walters
Pennant Walters Ltd
Hirwaun House
Hirwaun Industrial Estate
Hirwaun
Aberdare
CF44 9UL

Main contributors

Holly Taylor
Aimee Docwra
James Thomas

Issued by

.....
James Thomas

Approved by

.....
Chris Pryddech

WSP UK Limited

Canon Court West
Abbey Lawn
Shrewsbury SY2 5DE
United Kingdom
Tel +44 (0) 1743 342 000

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Document revisions

No.	Details	Date
1	Draft	July 2026

Executive summary

This Outline Construction Environmental Management Plan (CEMP) sets out the specific environmental management requirements and relevant guidance that Pennant Walters (the Applicant) appointed Principal Contractor (PC) will be required to adhere to and implement for all construction activities as part of the proposed Glanllynfi Garth Wind Farm project (the Proposed Development).

Prior to the commencement of development, a comprehensive and site-specific CEMP will be prepared by the Applicant and/or its PC and submitted to the relevant planning authority for approval. Once approved, the CEMP will be the management document that will be referenced by construction staff on a day-to-day basis. It will provide a documented procedure for controlling and mitigating environmental impacts and for preventing or minimising disruption to local residents and businesses during the construction stage of the development.

The CEMP will remain a live document throughout the pre-construction and construction processes and some provisions may extend into the operational phase. The CEMP consolidates all appropriate embedded measures, and additional mitigation and enhancement strategies where required, and clearly outlines what should be implemented, where, and by whom.

The CEMP will be the master document for consolidating all environmental requirements and undertakings that relate to the Site. As such it aims to ensure that construction activities for the proposed wind farm are carried out in accordance with legislation and good practice for minimising the effects of construction on the environment and local communities.

The objectives of the CEMP are to:

- Provide a mechanism for delivering many of the embedded environmental measures described in the Environmental Statement.
- Ensure compliance with legislation through setting out the need for consultation with 'consultation bodies' (see Regulation 2 in the EIA Regulations 2017), and by obtaining necessary consents and licences from relevant bodies.
- Provide a framework for monitoring and compliance auditing and inspection to ensure the environmental measures included in the Environmental Statement are being implemented.
- Ensure environmental best practices are adopted throughout the construction stage.
- Provide a framework for dealing with adverse effects as they occur.
- Ensure a prompt response should unacceptable adverse effects be identified during the works.

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1. Introduction

1.1 Purpose of this Report

- 1.1.1 This Outline Construction Environmental Management Plan (CEMP) relates to the proposed Glanllynfi Garth Wind Farm (referred to as 'the Proposed Development') near Maesteg and accompanies the Draft Environmental Statement (ES) that supports the Pre-Application Consultation (PAC) process.
- 1.1.2 A CEMP is a tool for managing the environmental impacts of a development during the post consent phase and is often produced at the request of a planning authority or Planning and Environmental Decisions Wales (PEDW) as a condition of planning consent.
- 1.1.3 This document has been produced to accompany the application for a Development of National Significance (DNS) and as such is not the product of a formal request. This Outline CEMP has been produced to demonstrate that Pennant Walters (the 'Applicant') understands the potential impacts of the works, which have been assessed as part of the Environmental Impact Assessment (EIA) process and to put in place a mechanism to ensure that the commitments made in the ES are implemented appropriately.
- 1.1.4 The purpose of this Outline CEMP is to set out a written set of standards and measures that will be implemented during the construction phase of the Proposed Development to ensure a consistent and effective approach to managing potential environmental impacts in order to minimise nuisances to communities and safeguard the environment. It incorporates legislative requirements, current standards and best practice measures to define the standards of good construction practice that contractors will be required to adopt and implement.
- 1.1.5 This is an outline document, which is based on the design assessed in the Draft ES (see **Chapter 4: Development Description** of the ES). It is a working document that would be updated as appropriate throughout the EIA process and following submission of the DNS.
- 1.1.6 Revisions to this Outline CEMP shall be agreed and approved by the Local Planning Authority (LPA) and recorded by the Applicant. The plan shall be continually reviewed to take into account additional environmental information encountered during the design and construction phases. It shall also allow for the inclusion of requirements and amendments that arise from the granting of a DNS or legitimate concerns of Third Parties. All personnel and sub-contractors working on the project shall perform their duties in accordance with the requirements of the CEMP. The Site Team shall report regularly to the Project Manager on the status and effectiveness of its implementation.

1.2 Overview of the Proposed Development

- 1.2.1 The Proposed Development is a wind farm consisting of a maximum of eight wind turbines, each with a three-bladed rotor with a diameter of up to 150m, a hub height of up to 105m and maximum height to blade tip of 180m.
- 1.2.2 The application also comprises associated infrastructure including:
- Two substations including transformer housing;
 - Two temporary construction compounds;
 - Two temporary site offices;

- Crane pads and cabling;
- Access track construction; and
- Overhead line connection (via wooden pole) to agreed Point of Connection (POC) with National Grid Electricity Distribution (NGED).

1.2.3 The Proposed Development would be located across two land parcels comprised of semi-improved grassland, marshy grassland and heathland, which are situated in the local authority area of Bridgend County Borough Council (BCBC). The location of the two land parcels is identified below:

- Pwll-yr-lwrch (hereafter 'Northern Array') – Central Grid Reference SS 87102 92887; and
- Cynhordy (hereafter 'Southern Array') – Central Grid Reference SS 88988 89854.

1.2.4 The nearest settlement is Maesteg, the outskirts of which are approximately 1km to the west of the Northern Array and 1.5km west of the Southern Array. There are a number of isolated residential properties located with 1km of each parcel.

1.2.5 Dunraven Forest and Cwmogwr Forest are located immediately adjacent to the eastern boundary of the Northern Array and Southern Array, respectively. The forest areas contain a network of tracks and trails. The Proposed Development will utilise these tracks (hereafter 'Forestry Access Track') to connect the land parcels (Northern and Southern Array) and provide access to the wider public highway at the A4061 Rhigos Road. The Forestry Access Track traverses the Rhondda Cynon Taf County Borough Council (RCTCBC) and Neath Port Talbot Council (NPTC) authority areas as shown in **Annex A**.

1.2.6 The Site Layout is shown in **Annex A**. Through the EIA process, the majority of environmental impacts can be avoided, minimised, and mitigated through a careful iterative design process. However, as identified in the Draft ES, there are potential impacts that cannot be mitigated through design and therefore further mitigation measures are required to be put in place during the construction of the Proposed Development.

1.3 CEMP: Aims and Objectives

1.3.1 This CEMP is intended to provide the contractor and client with a useful and essential project specific tool to manage on-site construction activities that may impact on the environment. The key aims of the CEMP are to:

- Ensure all environmental commitments are met and that all requirements of relevant statutory legislation, standards, and guidance are fulfilled;
- Ensure that disturbance to the physical environment from the Proposed Development is avoided, or where this is not possible, that disturbances are minimised and appropriately mitigated;
- Ensure that impacts on transport, tourism, historic sites, and cultural heritage are avoided, or where this is not possible, that impacts are minimised and appropriately mitigated;
- Ensure that the agreed site restoration is achieved on completion of the construction of the Proposed Development; and
- Ensure effective engagement with key stakeholders is undertaken as appropriate, in the delivery of the required mitigation.

- 1.3.2 Compliance with the CEMP will be a contractual requirement for all personnel and contractors involved in the construction of the Proposed Development.

2. Environmental Policies, Corporate Responsibilities and Emergency Procedures

2.1 Introduction

- 2.1.1 The overall responsibility for implementation of the CEMP lies with the Applicant and its appointed Principal Contractor (PC) for the construction works: the successful implementation of the CEMP will ensure that all relevant environmental commitments and responsibilities are adhered to. The Applicant is also responsible for auditing the implementation of environmental mitigation measures on site and ensuring an audit plan is developed prior to construction commencing.
- 2.1.2 These documents, together with adherence to key legislation and good practice guidance, represent the environmental requirements and standards which all personnel must comply with when working on behalf of the Applicant. This CEMP fully accords with all legislative requirements.

2.2 Appointed Contractor

- 2.2.1 The appointed PC for the construction of the Proposed Development (working on behalf of the Applicant) will be responsible for:
- Implementing the requirements of this CEMP in compliance with standard and site-specific Environmental Management Systems (EMS). The EMS must comply with ISO 14001;
 - Managing the environmental performance of all sub-contractors on site, including weekly monitoring to ensure that all sub-contractors comply with the requirements of the CEMP and ISO 14001;
 - Weekly monitoring of the environmental aspects of site works, ensuring compliance with the CEMP and ISO 14001, including regular inspections, audits, and appropriate procedures for addressing urgent matters; and
 - Training of site staff, including all sub-contractors, in general environmental awareness on specific environmental protection issues.
- 2.2.2 The appointed contractor will also be responsible for ensuring, through the incorporation of the provisions outlined in this document, that all relevant planning consent conditions, licences, and mitigation commitments that apply to site work are satisfactorily discharged. This will ensure that the environmental impact of construction activities is kept to a practicable minimum.

2.3 Overall Responsibilities for Pennant Walters Site Management Team

- 2.3.1 Overall day to day responsibility for ensuring that all standard and site-specific environmental actions are adhered to rests with the appointed PC Site Management Team and the Ecology Clerk of Works (ECoW).

- 2.3.2 The appointed Site Management Team will undertake regular meetings and site inspections to ensure that all site-based personnel are aware of the environmental commitments as referenced or detailed in this document.
- 2.3.3 Under the direction of the appointed PC, all personnel and any sub-contractors working on this project must take all reasonable precautions and undertake all reasonable measures within their control to ensure that all legal requirements are complied with and that no unnecessary damage, disturbance, or pollution results from undertaking the proposed construction works.

2.4 Incident Response

- 2.4.1 A Pollution Prevention Plan will be developed by the PC as part of the CEMP to highlight the potential pollution receptors specific to each works area and the activities taking place there. The document will be in place prior to construction activities commencing and will be available for viewing and be briefed to the workforce onsite.
- 2.4.2 The Pollution Prevention Plan will be reviewed and if necessary, updated, at least every six months. The key components of each Incident Response Plan be:
- A brief scope of works taking place on site;
 - Types of environmental incident that have the potential to occur (however low the risk);
 - Types of hazardous material likely to be present on site;
 - A list of pollution receptors and maps showing their location in relation to the Site;
 - The procedure for responding to environmental incidents, reporting them and investigation (including spill or leak events);
 - Key contact numbers for reporting of environmental incidents; and
 - Recommendations to help reduce the likelihood of environmental incidents.
- 2.4.3 In the event of a spill or leak, the following process shown in **Plate 2.1** will be followed. This will be included in the Pollution Prevention Plan, and this will be briefed to the workforce and displayed onsite notice boards.

EMERGENCY SPILL RESPONSE PROCEDURE

What to do if you find a spillage of any substance on site.

STOP – CONTAIN – NOTIFY – CLEAN UP – INVESTIGATE

STOP

Most senior person on site becomes the **RESPONSIBLE PERSON** and **STOPS** the work immediately.

Identify substance spilt, obtain MSDS/ COSHH information and correct PPE.

STOP any more material spilling, e.g. right oil drums, close valves; extinguish fires using fire extinguisher. Switch off sources of ignition e.g. switch off plant.
But only if it is safe to do so.

CONTAIN

CONTAIN the spillage using bunds of earth or sand, drip trays, booms and/or spill materials immediately.

Check the spill has not reached any drains/manholes, watercourses, etc. Stop the flow if possible. Divert the flow from drains/watercourses. Bund drains/manholes to stop the substance entering the drainage system.
Do not wash spillage or runoff into the drainage system.

NOTIFY

NOTIFY SITE MANAGER immediately giving the following information:

- whether the material has entered the drain/ watercourse or is affecting the environment
- substance involved
- location
- cause of the incident
- volumes involved

Site Manager immediately **NOTIFIES** the **ENVIRONMENTAL ADVISOR** who informs the relevant persons i.e. Client, Regulatory Authorities.

CLEAN UP

CLEAN UP the spill:
MAJOR – call in expert advice/specialist Clean-up Contractor
MINOR – clean up the spill using appropriate spill materials.

CLEAN UP waste materials:
• Bag-up used spill materials
• Remove contaminated ground and wastewater
Dispose of waste materials as Hazardous Waste

INVESTIGATE

RESPONSIBLE PERSON fills in Environmental Incident Report Form and passes to **ENVIRONMENTAL ADVISOR**.

ENVIRONMENTAL ADVISOR INVESTIGATES the incident and determines root causes; lessons learnt; and corrective actions to be taken to prevent recurrence. This information is fed back into the system via Training, Toolbox Talks, Briefings, Bulletins, and Procedural changes as required.

SPILLAGE TYPE

MAJOR	Cannot be controlled; pollution has entered or could enter a drain or watercourse. Report to Site Manager/Environmental Advisor immediately.
MINOR	Can be controlled; pollution has not entered, and cannot enter a drain or watercourse

Plate 2.1: Spill Response Procedure

2.5 Emergency Procedures

- 2.5.1 All environmental incidents must be reported to the Site Management Team who will decide whether the incident is reportable to Natural Resources Wales (NRW) or other Regulators.
- 2.5.2 NRW should be contacted by the Site Management Team within 2 hours where an incident results in direct pollution of a watercourse. This should allow for inspecting the incident, taking immediate actions to control/mitigate impacts and enable NRW to inform third parties and to take further mitigation steps if required.
- 2.5.3 In addition to notification of any environmental incident via the Natural Resources Wales number 0800 807060), the local NRW Office must be contacted and informed; enquiries@naturalresourceswales.gov.uk.
- 2.5.4 All emergency response arrangements will be included in the construction site induction and communicated to the relevant regulatory bodies if required.

Flood Emergency Response

- 2.5.5 If there are flood alerts in the vicinity of the construction site:
- CONTACT NRW flood warning line on **0345 988 1188**;
 - OBTAIN as much information as possible from NRW i.e., what timescales are involved and what level of flooding is expected;
 - If flooding is IMMINENT ensure that fuel, oil, and other potential contaminants are moved out of danger or stored as securely as possible; and
 - If the extent of the flooding becomes serious and an EVACUATION of the site is deemed necessary, a decision to evacuate will be made by a senior person on site – the appointed contractor's Project, Site or HSSE Manager.

Other Environmental Incidents

- 2.5.6 If there is any other type of environmental incident, stop what you are doing and report it to your supervisor. These may include:
- Complaints from third parties e.g., noise, dust, light pollution;
 - Discovery of suspected contaminated land;
 - Discovery of protected animals, birds, or reptiles;
 - Damage to trees and hedgerows and/or sites designated for nature conservation reasons;
 - Discovery of archaeological or historic remains; and
 - Near misses – where events could have led to a minor or major incident.
- 2.5.7 The appointed contractor's Site Management Team should be notified immediately.

3. Construction Environmental Issues

3.1 Introduction

- 3.1.1 This section of the Outline CEMP identifies key environmental issues which may require to be addressed during the construction process, together with appropriate environmental management actions.

3.2 Timing of Works and Contingency Plans

- 3.2.1 The construction period for the Proposed Development is anticipated to last approximately 22 months. The start date will depend on the timing of planning consent.
- 3.2.2 The timing of the construction works will be very important. Where possible, the works will be planned to avoid periods of high rainfall and also the winter months, given that the winter months are generally windier and wetter, which makes the schedule of turbine lifts difficult, and creates additional challenges with managing run off and storm events. Measures to manage surface water flows during construction are detailed in **Section 4.3** of this Outline CEMP.
- 3.2.3 For the purposes of this Outline CEMP, construction activities are assumed to take place during core hours, specifically between 07:00 and 19:00 on weekdays, and between 07:00 and 13:00 on Saturdays. No construction activities will be undertaken on Sundays or Bank Holidays. Quiet on-site activities, such as electrical commissioning, may extend beyond these core hours where necessary. Working hours may also be reduced in response to seasonal or weather-related restrictions, or in specific locations where mitigation is required (for example during the breeding bird season should a stand-off from an active nest be required).
- 3.2.4 There are various contingency plans in place in this Outline CEMP and appendices covering emergency procedures for various aspects including pollution prevention, flooding, waste management etc. These various measures are all considered to amount to suitable and appropriate contingency plans for the construction of the Proposed Development.

3.3 Site Environmental Monitoring Processes

Monitoring Schedule

- 3.3.1 Where required on the project, environmental monitoring will be carried out in accordance with the appointed contractor's relevant HSSE Procedures and Guidance Notes.
- 3.3.2 The following monitoring will be carried out throughout the duration of the construction:

Table 3.1 Monitoring Schedule

Item	Details	Staff Responsible
Daily Monitoring	Local access tracks onto the nearby public highway and hardstanding areas for mud/debris needing to be cleaned.	Site Manager
	Aggregate and sand delivery vehicles to be appropriately sheeted	Site Manager
	Access tracks inspected for dust arisings and dampened down	Site Manager
	Site inspected for litter	Site Manager
	Clearance of litter	All site staff
Weekly Monitoring	Storage containers and bunds in temporary compound checked for leaks / damage	Site Manager
	Waste removed from storage areas	Site Manager
	Fences around sensitive environmental areas checked for correct position and for damage	ECoW (for ecological areas) Site Manager
	Signage and fences/gates around rights of way checked to ensure they are readable, in the correct position and not damaged	Site Manager
Monthly Monitoring	Position and direction of lighting	Site Manager
	Condition of access tracks, including adjacent verges and drainage channels	Site Manager
	Operation of wheel wash and condition of drainage serving this	Site Manager
As required	Servicing of vehicles and machinery	Site Manager

3.4 Site Waste Management

3.4.1 The following good site waste management practices will be implemented by the appointed contractor for the construction works:

Ordering

- Do not over order materials;
- Minimise ordering standard lengths as opposed to the 'real' lengths as this will increase potential for waste; and
- Think about delivery times.

Storage – Good Housekeeping

- Incorrect storage could lead to damage or contamination - replacement items are then required;
- Check shelf life and storage instructions on packaging;
- Segregate waste types – inactive, active, special, and then material types – metals, wood, concrete, plastic etc.;
- Recycle and reuse materials wherever possible e.g., timber, plastics, cardboard, tyres etc.

- Waste must not be kept in a corroded or worn container. The minimal waste from offcuts of materials will be stored within closed waste skips;
- Ensure that any container is secure, where necessary, so as to prevent accidental spillage, leakage etc;
- Waste must be kept in a manner that prevents it from falling from containers while in storage or in transit;
- Waste must be protected in an appropriate manner to prevent scavenging from animals; and
- Do not allow waste storage containers to overflow.

Delivery and Handling

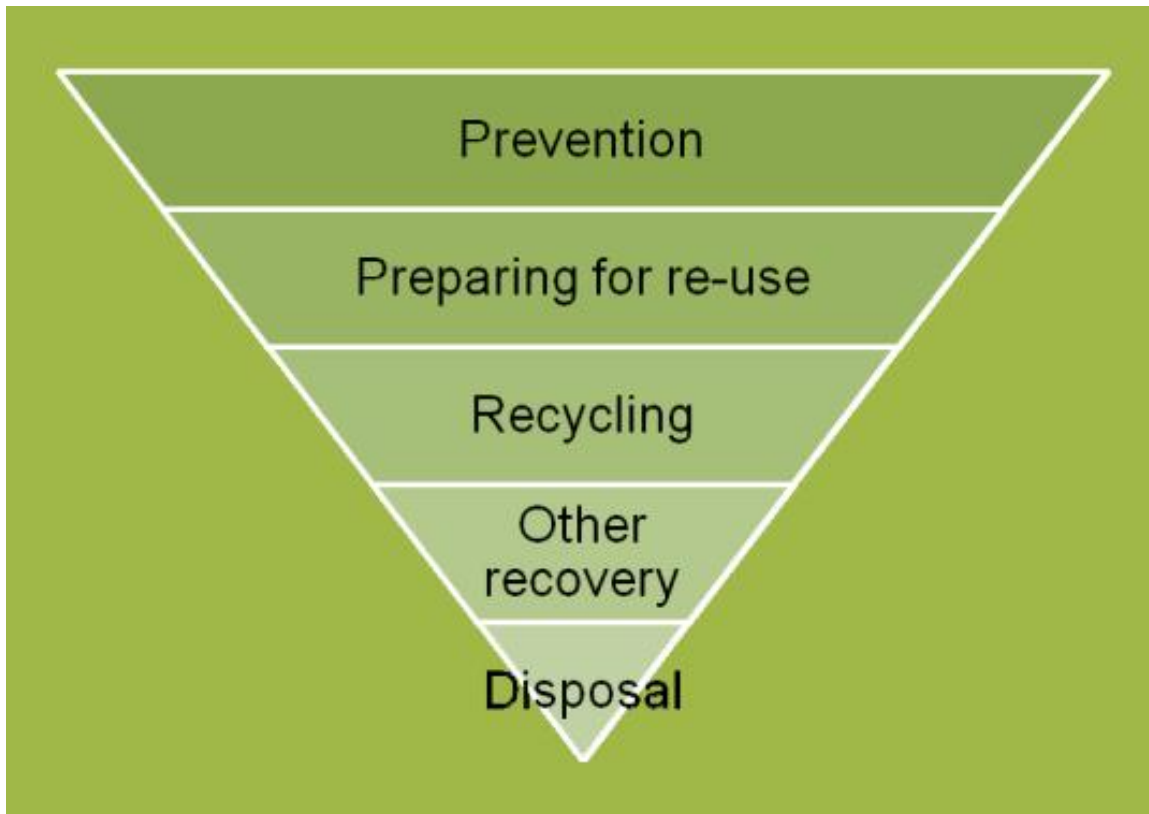
- Avoid damage during unloading;
- Unload in designated areas, where possible, to minimise double handling;
- Do not accept incorrect deliveries; and
- Be aware that repetitive handling leads to damage.

Waste Sorting, Storage and Recycling

- 3.4.2 Fully enclosed skips and other smaller containers will be used for all wastes on site. Waste materials will be sorted into separate skips to allow segregation of waste materials for recycling or recovery.
- 3.4.3 No materials will be burned on the Site. Hazardous waste will be held in a separate skip (or suitable bunded facility) and disposed of at a suitably licensed site.
- 3.4.4 All the legal documents to ensure the Duty of Care for waste will be kept at the appointed contractor's site management office during the construction of the Proposed Development. No waste would leave the Site until the appropriate waste carriers' license and management certificates for the disposal site or transfer station have been inspected and authenticated by the relevant parties.
- 3.4.5 All waste leaving the Site will be accompanied with a Waste Transfer Note (WTN) (for non-hazardous material) or Hazardous Waste Consignment Note (HWCN).

Waste Hierarchy

- 3.4.6 Further to the above, the appointed contractor will be required to undertake waste management in accordance with the waste hierarchy to help ensure that the amount of waste generated is minimised, and where possible, recycled. **Figure 3.1** below sets out the waste hierarchy which will be used during the construction process.

Figure 3.1 Waste Hierarchy

Source: [Corporate cover and copyright page for consultations \(gov.wales\)](#)¹

Importing and Disposal of Waste

- 3.4.7 Should any waste need to be imported to Site during the construction works, such as packaging for materials delivered to site, they would be stored and used only in accordance with either a waste management licence or exemption under The Waste (England and Wales) Regulations 2011². Similarly, any waste from within site offices or welfare facilities will be disposed of within closed skips, located within the temporary construction compound and removed on a regular basis. Any waste removed from Site would be disposed of at suitably licensed or exempt waste management facilities in accordance with these regulations.

Control of Hazardous Materials

- 3.4.8 The use of hazardous materials will be avoided where possible in the construction of the Proposed Development with priority being given to non-hazardous materials over those which require special precautions under the Control of Substances Hazardous to Health regulations.
- 3.4.9 If hazardous materials and substances are needed on site these will be stored in a secure lockable container located within the temporary construction compound in accordance with the manufacturer's instructions.

¹ Welsh Government, (2012). Guidance on Applying the Waste Hierarchy. Available online at: [Corporate cover and copyright page for consultations \(gov.wales\)](#)

² The Waste (England and Wales) Regulations 2011, SI 2011/988. (2011). London. Available at: [The Waste \(England and Wales\) Regulations 2011](#)

- 3.4.10 Control of Substances Hazardous to Health (CoSHH) assessments would be completed by all contractors for activities using hazardous substances.
- 3.4.11 Any on site facilities for the storage, transportation or refuelling of chemicals, oils or fuels shall be sited on suitable impervious bunds. No discharge of hazardous materials to any watercourse, land or underground strata would be permitted.

Sewage

- 3.4.12 All sewage will be captured in an enclosed self-contained tank, which will be emptied by a visiting tanker. These assets will be routinely emptied and inspected.

3.5 Details of Track maintenance, Oil Storage and Lighting Columns

- 3.5.1 Detailed Construction Method Statements will be prepared by the site team for each element of the works prior to commencement however the following sections provide an overview of the working methodologies which will be employed on the site during the construction period for these details.

Track Maintenance

- 3.5.2 A regular maintenance regime will be established to prevent water ponding and excessive build up on the track surface. This will generally be carried out by:
- Regular grading of the tracks to remove any slurry;
 - Topping the track with graded stone to ensure minimal ponding; and
 - Using an observational technique which will highlight areas that require additional maintenance.
- 3.5.3 Reinstatement of the sides of the access tracks will be undertaken where possible as the construction progresses. This will be dependent on a number of factors such as weather conditions, the programme, permanent cable location and the site track layout.
- 3.5.4 On completion of the access tracks, it is envisaged that any further disturbed ground would be reinstated.
- 3.5.5 A further reinstatement period will also be required at the end of the construction phase to complete works to the site compound areas. Typically, turves and topsoil removed in the original excavation will be re-used in the restoration to ensure natural regeneration.

Oil Storage

- 3.5.6 The following general requirements will be followed on site:
- Spill Stations will be located at each work area where refuelling is carried out or any risk of spillage is identified. Positions will be reviewed continually and relocated to suit ongoing/programmed works;
 - Spill Response Instructions will be kept on prominent display at fuel storage areas, spill stations and in the site office;
 - Oil and fuel storage tanks will be self-bunded and will be physically protected by spill trays. All valves and tank couplings will be located within the tank bund, and a spill kit will be held beside the bulk storage tank;

- Mobile plant and vehicles will be refuelled beside relevant tanks. Filler handles will be auto-shut-off trigger-spring type, i.e., as per garage pumps. They will be stored within the bund at all times. Static plant will be refuelled at their operational location using a mobile bunded fuel bowser or jerry cans (all static plant to have spill tray/plant nappy);
- All fuel and oil containers will be locked in a secure store to prevent theft and vandalism;
- Where fuel is to be transported in small quantities, only fuel-type marked 'jerry cans' 5/10/20 litre will be used. All bunds and settlement areas will be checked daily for evidence of pollutants. Adequate oil absorbent and containment materials must be held in signposted 'spill stations' and staff briefed on how to use spill equipment effectively; and
- Oil contaminated water from bunded areas, drip trays or plant nappies will be removed using oil-absorbent pads. Contaminated water or other materials will be disposed to an appropriate disposal site with the necessary paperwork in place in accordance with Site Waste Management arrangements (see **Section 3.4**).

Lighting Columns

- 3.5.7 Should there be a need to provide temporary illumination of working areas in the mornings and evenings and also if any night-work is required so as to ensure safe working, then this will be achieved through the use of mobile lighting units. Although the Site is generally remote from residential properties, temporary lighting will be positioned in such a manner that light 'spillage' is avoided. No permanent lighting columns would be installed on site.
- 3.5.8 Temporary lighting during the construction phase would avoid lighting ditches, ponds, hedges and woodland. Motion sensors would be used, minimising the use of light; spill limited so only the task area is lit using accessories (e.g. hoods) to shield or direct light to where it is required. Lighting would use narrow spectrum light sources emitting minimal ultraviolet light peaking higher than 550 nm, white lighting should be of a warm /neutral colour temperature.
- 3.5.9 Where lighting cannot be avoided during the spring/summer months, advice will be sought from the project ecologist in respect of protected species and their sensitivities. Measures for lighting will also be contained in an Ecological Construction Method Statement (ECMS) that will be produced in prior to the commencement of construction.

Access Tracks

- 3.5.10 The track design resulted from the optimisation of the following criteria:
- track length is kept to a minimum and utilises existing access tracks where possible to reduce environmental impact, construction time and material quantities (imported stone);
 - new track gradients are to be kept to less than 8 percent (1 in 12.5) and radius curves to 50m where practicable to accommodate the requirements of delivery vehicles and also to allow construction plant to move safely around the Site;
 - track layout is designed to reflect contours and avoid cross slopes and deep cut and fill into existing terrain where possible; and
 - tracks are routed to avoid sensitive ecological, archaeological and hydrological features, where possible.

- 3.5.11 If ground conditions require it, a temporary trackway of either metal, wood, or plastic, would be used for vehicles to access the working areas. This would be removed once construction is complete.

3.6 Reinstatement of Temporary Working Construction Areas

- 3.6.1 There will be a number of temporary working areas that will need to be created during the construction works. Following completion of the construction works, the land used for temporary working construction areas will be returned to the pre-construction condition, as far as reasonably practicable in line with soil handling guidance, such as the following:
- Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (PB13298)³.
 - IQ Good Practice Guide for Handling Soils in Mineral Workings⁴.
 - BSSS Working with Soil Guidance Note on Benefitting from Soil Management in Development and Construction⁵.

3.7 Water Abstraction

- 3.7.1 There will be no abstraction from watercourses. In the event that there is not enough mains water available on-site for plant washing and dust suppression, water may be tankered to the Site.

3.8 Public Safety and Access

- 3.8.1 Appropriate signage and fencing as necessary will be put in place on site during the construction works to ensure that public safety is maintained. Should there be any need to restrict access during the construction works, then this will be kept to a minimum and will only be for areas where there are active works taking place.
- 3.8.2 An information board will be kept adjacent to the site compound and site access which will provide information on the timing of construction works and contact details for the appointed site manager in the event of any queries.
- 3.8.3 The Proposed Development Site is intersected by public access routes. An overview of the local Public Rights of Way (PRoW) network is presented in **Appendix 12A** of the ES. The PRoW footpath MAE/4/2 adjoins the eastern boundary of the Northern Array and footpath MAE/59/1 crosses the northwestern corner of the Northern Array. Within the Southern Array, bridleway GWV/30/1 traverses the western part of the land parcel and Footpath GWV/29/1 crosses the southeastern part of the Southern Array and continues along the boundary. Footpath GWV/36/2 also runs along the northwestern part of the Southern Array.
- 3.8.4 An extensive number of PRoW across the BCBC, NPTC and RCTCBC areas interact with the Forestry Access Track.
- 3.8.5 Construction activities may require a temporary closure and diversion of some footpaths to ensure safety for any users. If required, appropriate measures would be developed to

³ Department for Environment, Food & Rural Affairs (2018). Code of practice for the sustainable use of soils on construction sites. Available at: <https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites>

⁴ The Institute of Quarrying (2021). Good Practice Guide for Handling Soils in Mineral Workings.

⁵ British Society of Soil Science (2022). Working with Soil Guidance Note on Benefitting from Soil Management in Development and Construction.

ensure safe access is maintained. A Public Rights of Way (PRoW) Management Plan will be developed in accordance with the outline version (see **Appendix 12A** of the ES). This will include appropriate measures for the management of PRoWs.

- 3.8.6 Signage will be required where a PRoW crosses the Site access to advise users of the construction works taking place. Occasional temporary, short restrictions may be required when abnormal loads of high traffic loads are expected. Such temporary restrictions will be managed by site staff (banksman) at the access point.

3.9 Construction Traffic

- 3.9.1 An **outline Construction Traffic Management Plan (oCTMP)** has been prepared as **Appendix 12B** of the ES. Under the CTMP, Heavy Goods Vehicles (HGVs) associated with the construction of the Proposed Development will be provided specific routes to adhere to. An abnormal load access study has been completed to provide a route for the Abnormal Indivisible Loads (AILs) associated with the Proposed Development. This is reported in **Appendix 12C** of the ES.
- 3.9.2 If required by the highway authorities in the interests of road safety, timing restrictions could be considered whereby vehicles would not be able to gain access into the proposed work area or depart from the proposed work area at certain times of the day. This may include, for example, peak congestion times on the road network and local school drop off/pick up times where practical and relevant.
- 3.9.3 The main contractor will develop a logistics plan to be shared with all contractors, staff and visitors of the site which would set out the access point, loading bay area, pedestrian and vehicle segregation areas, welfare locations, storage, security and material handling areas. These will be enforced throughout the establishment of the site.
- 3.9.4 The HGV drivers will be provided an approved construction traffic route(s) to the Site and a clear set of protocols will be established to monitor and ensure compliance.

4. Topic Specific Management Plans

4.1 Dust Management

4.1.1 The main activities involved as part of the Proposed Development which may cause dust emissions include the following:

- Construction vehicle movements;
- Cutting and grinding of concrete and blocks;
- Earthworks; and
- Stockpiles.

General Requirements

4.1.2 Particular care would be required to maintain dust emissions at a practicable minimum when working in the vicinity of residential properties and environmentally sensitive areas. Good practice mitigation would be required during dry conditions. The use of Best Practicable Means (as defined in Part III of the Environmental Protection Act 1990) would be employed. The appointed contractor will be responsible for undertaking and recording daily checks to manage dust emissions. The environmental measures to be implemented to control dust emissions during construction and decommissioning are:

- Check the local weather forecast at the start of the working day, to identify likely daily weather conditions;
- The use of dust suppression facilities on-site. This would include the provision of water bowsers with sufficient capacity and range to dampen down all areas which may lead to dust escape on-site;
- Any storage on-site of aggregate or fine material would be properly enclosed and screened so that dust escape is avoided. Adequate sheeting would also be provided for the finer materials which are prone to 'wind whipping';
- Wheel wash facilities would be installed for vehicles entering and exiting the Site where required. This facility would be able to automatically clean the lower parts of the HGVs, by removing mud, clay etc from the wheels and chassis in one drive through operation;
- HGVs entering and exiting the Site would be fitted with adequate sheeting to totally cover any load carried which has the potential to be 'wind whipped' from the vehicle;
- Good housekeeping or 'clean up' arrangements would be employed so that the Site is kept as clean as reasonably practicable. There will be daily inspections of the working areas and immediate surrounding areas to ensure that any dust accumulation or spillages are removed/cleaned up as soon as reasonably practicable;
- The appointment of a contact to whom complaints/ queries about construction dust can be directed. Any complaints to be investigated and action taken where appropriate.
- Undertake regular visual checks throughout the day to ensure dust at the above locations is being suppressed;

- Avoid the use of open skips wherever reasonably practicable;
- In the event that dust is being blown off-site, cease dust generating activities until wind conditions improve or dust is suitably managed;
- Undertake regular visual checks throughout the day of dust management during earthworks and regular movement of HGVs on tracks;
- Actively monitor dust management and where dust pollution is likely to affect neighbours, cease all activities until suitable management procedures can be implemented;
- A record will be kept on site of all dust related complaints and remedial actions taken;
- Complaints will be reported to the Appointed Contractor's Site Management Team and where required, a review of the dust management procedures will be undertaken; and
- Staff will be briefed on changes required to working practices to ensure the incident is not repeated.

4.1.3 In addition to the above daily checks, the following dust management procedures will be followed on site:

- All staff will be trained on the importance of dust management procedures;
- Activities on site will be planned to ensure risk of pollution from wind-blown dust is reduced to a minimum;
- Only appropriate plant will be used, and all equipment will be regularly maintained; and
- Burning of materials is not permitted in any working area.

4.2 Noise Management

4.2.1 Whilst adverse effects from construction noise and vibration are considered very unlikely, the construction activities will be managed by the adoption of Best Practicable Means (BPM) as defined in Section 72 of the Control of Pollution Act 1974⁶, including the advice contained within BS 5228-1:2009+A1:2014⁷.

4.2.2 Embedded measures to minimise noise and vibration from the construction of the Proposed Development are identified in **Table 4.1**.

Table 4.1 Summary of the embedded environmental measures related to noise

Receptor	Potential Changes and effects	Embedded Measures
All	Construction noise and vibration effects from site works	All construction activities undertaken in accordance with Best Practicable Means (BPM) as set out in BS5228-1:2009+A1:2014.
All	Construction noise and vibration effects from site works	All employees on the construction site will be advised of quieter methods of operating plant and tools. Noise control measures (silencers, mufflers, any noise barriers, etc.) are to be subject to regular inspection and maintenance.

⁶ Control of Pollution Act 1974, as amended.

⁷ BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise. Available at: [BS 5228-1:2009+A1:2014](https://www.bsi.com/standards/BS/5228-1-2009+A1-2014) | 1 Jan 2009 | BSI Knowledge

Receptor	Potential Changes and effects	Embedded Measures
All	Construction noise and vibration effects from site works	Where practicable, for any particular activity, suitable plant, machinery and working practices will be adopted.
All	Construction noise and vibration effects from site works	Construction plant capable of generating significant noise and vibration levels will be operated in a manner to minimise noise emissions.

4.3 Water Environment

Flood Management

- 4.3.1 Construction works will take place during periods of normal to low flow conditions to avoid conveyance-related flood risk effects.
- 4.3.2 A Flood Evacuation Plan should be produced to ensure that all personnel will be evacuated before a potential flood event, during construction, operation and decommissioning. The Site manager (or appropriate person) will sign up to receive NRW flood warnings and evacuate all personnel upon receipt of one.

Construction Drainage

- 4.3.3 During construction, existing drainage pathways would be retained where practicable and runoff managed within the same hydrological catchments. SuDS and pollution prevention measures would be used to control runoff rates, sediment and water quality before discharge to receiving watercourses.
- 4.3.4 Surface water runoff would be managed through appropriately designed drainage systems to control discharge rates, volumes and sediment mobilisation. Runoff and sediment would be intercepted and treated prior to discharge where required, with drainage features designed to minimise erosion and sediment deposition. Existing riparian vegetation and natural drainage features would be retained where practicable, and pollution prevention measures implemented to protect water quality and Water Framework Directive (WFD) objectives (see below).
- 4.3.5 New impermeable areas would be limited where practicable. Access tracks, crane pads and ancillary infrastructure would use semi-permeable construction where appropriate. Temporary and permanent drainage would be designed using SuDS principles to attenuate runoff, mimic natural drainage pathways and manage flows within the same catchments where practicable.
- 4.3.6 If shallow groundwater is encountered, the dewatering⁸ of excavations (i.e. for foundations or cable trenches) may be required. The groundwater removed by dewatering would be pumped to an appropriate location to allow any sediments present to be settled, prior to discharge to local surface watercourses or across ground away from the excavations. This would be discussed and agreed with the LPA and/or NRW, prior to discharge, and would be undertaken in accordance with measures provided within the CEMP and Pollution Prevention Plan. Dewatering, where required, would be localised, temporary and managed to avoid adverse effects on groundwater and connected receptors.

⁸ Dewatering refers to the process of removing groundwater or surface water from a trench, ditch or watercourse.

- 4.3.7 A range of sediment and erosion control measures will be implemented throughout the construction period to minimise the mobilisation and transport of sediment and protect water quality. These measures will include:
- Minimising the extent and duration of exposed and disturbed ground, particularly in areas close to watercourses and drainage features;
 - Locating material, soil and excavated spoil stockpiles at least 20 m away from watercourses wherever practicable and protecting stockpiles through covering, bunding or other suitable measures where required;
 - Installing sediment control measures, such as silt fencing, sediment traps, earth bunds, filter media or equivalent measures, where necessary to intercept and retain sediment-laden runoff before it reaches watercourses;
 - Managing construction activities, including the movement and operation of plant and machinery, to avoid the creation of preferential flow pathways between disturbed ground and adjacent watercourses;
 - Providing appropriate site access arrangements, including contained wheel-washing facilities where required, to prevent the tracking of sediment onto hard surfaced areas and its subsequent mobilisation by surface water runoff; and
 - Progressively stabilising and reinstating disturbed ground as soon as practicable following construction activities, including through reseeded, revegetation, surfacing or other suitable erosion-control measures as appropriate.

Pollution Prevention

- 4.3.8 The construction phase would incorporate pollution prevention measures to ensure that the potential for any temporary effects on water and groundwater quality are reduced as far as practicable. A Pollution Prevention Plan will be developed as part of the CEMP, prior to construction, which would set out the pollution prevention measures, and emergency incident response procedures, which will be implemented by the contractor during construction. Key measures to be included within the Pollution Prevention Plan would include:
- Areas of construction compounds that are used for fuel storage, plant maintenance and refuelling will be surfaced with fully impermeable materials to prevent any infiltration of contaminated runoff.
 - Oil and chemical storage would be secured in over-ground bunded areas, limited to the minimum volume required to serve immediate needs with specified delivery and refuelling areas.
 - An accident response protocol would be developed to ensure any spillages or potential pollution incidents are dealt with appropriately including the provision of containment for spills of contaminated liquids.
 - Fuel storage will be in accordance with Pollution Prevention Guidelines (PPGs). All stores of fuel will be located at least 20m from any watercourses and away from areas at risk of flooding.
 - Plant and machinery would be maintained to minimise the risks of oil leaks or similar. Any tanks containing oils, fuels and chemicals would be double skinned.
 - Emergency spill kits retained onsite with regular briefings and training for site operatives on emergency response arrangements;

- Any temporary onsite storage of excavated materials suspected or confirmed to be contaminated will be placed on impermeable sheeting, covered over and with adequate leachate/ runoff drainage to prevent migration of contaminants from the stockpile.
- Materials would be segregated where possible to prevent cross-contamination occurring and would only be reused if confirmed to be suitable for use.
- A surface water quality monitoring programme is recommended, to commence prior to construction and continue into the early operational period. During construction, this would include an adaptive monitoring system enabling early investigation of parameters out with expected ranges, with prompt alerts to the construction team to amend any work activities causing an adverse effect.

4.3.9 Furthermore, no works are to be undertaken within 20 m of a watercourse, with the exception of watercourse crossings, which have been minimised as far as possible.

Outline Drainage Strategy

4.3.10 An Outline Drainage Statement (ODS) has been developed and is provided within **Appendix 10A** of the ES. Suitable temporary silt fencing, bunding and water quality measures (i.e., silt capture to maintain storage volume) will be included in the design of the Proposed Development. Sufficient capacity will be provided onsite to hold runoff prior to discharge runoff to ground and/or any water discharge into watercourses is limited to greenfield rates. A water quality monitoring programme will be agreed with NRW and implemented prior, during and following construction.

4.4 Land Contamination and Geohazards

Review of PRA Information

4.4.1 A Preliminary Risk Assessment (PRA) (see **Appendix 11A** of the ES) has been undertaken for the Northern and Southern Array of the Proposed Development, which identified several potential contamination sources. The key potential on-site sources of contamination identified comprise:

- Current and historical farming activities.
- Made Ground associated with potentially infilled quarries/colliery, adits, ground workings and dismantled tramways.
- Made Ground associated with residual coal mining waste, including refuse heaps.
- Mine gas associated with coal seams, mine entries and former workings.

4.4.2 The Town and Country Planning Act 1990⁹ requires the consideration of the potential for contamination to be present and ensure a site is suitable for the proposed end use.

4.4.3 The PRA recommends that to mitigate the risks associated with potential land contamination, a targeted ground investigation is needed in areas where development is proposed. This must be undertaken during the pre-construction phase so that sufficient information on the ground conditions and chemical status of the soil, groundwater and ground gas is available that the land can be demonstrated to be suitable for the proposed end use.

⁹ The Town and Country Planning Act 1990

- 4.4.4 The potential land contamination constraints can be mitigated through targeted ground investigation to include gas monitoring where buildings/ enclosed spaces are to be constructed. The investigation could also be used to confirm the presence/ absence of contamination in shallow soils in areas where development is proposed, method statements including procedures for encountering unexpected contamination, Environmental Management Plans, and health and safety plans for the works.

Requirement to review and update the CEMP in relation to ground conditions

- 4.4.5 Further investigation or remediation will need to be undertaken in accordance with the Land Contamination Risk Management (LCRM) guidance¹⁰. LCRM advocates a phased approach to land contamination assessment, starting with desk study and site walkover (a site walkover has not been completed at this stage of the project) then progressing to exploratory investigation. At each stage of land contamination risk assessment, hazards must be identified, and risks assessed using a source-pathway-receptor linkage approach to determine whether there are any potentially unacceptable risks requiring further investigation / assessment or remediation. The LCRM also requires the use of competent persons to carry out land contamination risk assessment and to carry out site work.
- 4.4.6 This CEMP will remain a live document throughout the pre-construction and construction phases and in relation to ground conditions, including land contamination, it will be reviewed and updated when further information on ground conditions is obtained by ground investigation or by other means. Based on the updated assessment(s), the CEMP will be updated to set out the required measures to mitigate any potentially unacceptable risks at each stage.

Pre-Construction Ground Investigation

- 4.4.7 Phase 2 intrusive geo-environmental ground investigation will be completed during the pre-construction phase, including soil sampling and chemical testing, to confirm the Ground Conditions.
- 4.4.8 The scope of the pre-construction ground investigation is to be confirmed, however as a minimum will include environmental testing of soil for potential contaminants, including asbestos, metals and hydrocarbons, in addition to geotechnical testing to inform the design and material selection. Deeper soil testing will be carried out as needed to inform the detailed (post consent) design of the Proposed Development in relation to former colliery tip areas or other areas of suspected made ground. The results of the soil testing will be used to carry out a contaminated land risk assessment to confirm that the soils are suitable for use in the Proposed Development. Monitoring for gas and groundwater is to be undertaken at the proposed turbine locations and associated with mine related features beneath access/internal roads to inform the design. The contaminated land risk assessment will be completed in accordance with the Environment Agency LCRM guidance.

Protection of Human Health

- 4.4.9 Potential risks to human health from any known, suspected or unexpected ground contamination will be avoided by adopting appropriate working methods and all aspects of construction will be completed in compliance with the Construction (Design and

¹⁰ Environment Agency (2025). *Guidance: Land contamination risk management (LCRM), How to assess and manage the risks from historic land contamination*. Available at: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

Management) Regulations 2015¹¹, CAR 2012¹² and the Health and Safety at Work Act (1974)¹³ and regulations made under the Act. These legal obligations include the requirement for risk assessments and method statements for all construction related activities and the use of appropriate working methods, training and Personal Protective Equipment (PPE).

- 4.4.10 Under CDM 2015, designers must avoid foreseeable risks so far as reasonably practicable by: eliminating hazards from the construction, cleaning, maintenance, and proposed use and demolition of a structure; reducing risks from any remaining hazard; and giving collective safety measures priority over individual measures.
- 4.4.11 Contamination if found will be subject to appropriate risk assessment and if necessary, either removed, treated and/or mitigated as part of the Proposed Development. If, during development, contamination not previously identified is found to be present at the Site then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until a remediation strategy detailing how this unsuspected contamination shall be dealt with has been submitted to and approved in writing by the Local Planning Authority. The remediation strategy shall be carried out as approved prior to development taking place.

Ground Stability and Good Design

- 4.4.12 A Coal Mining Risk Assessment (CMRA) will be completed for the Site and will include recommendations to address potential ground instability risks associated with former deep coal mining and possible unrecorded shallow mine workings. The CMRA will ensure that land stability issues are understood and adequately addressed in the design, and that appropriate measures, such as intrusive investigation, are considered or completed during the pre-construction phase, as recommended in the CMRA, i.e., boreholes and trial pits. Remediation may subsequently be needed. The potential intrusive investigations and any remediation work required based on the findings of these investigations will be communicated to the Mining Remediation Authority in advance of undertaking the works.
- 4.4.13 In relation to ground stability, the commitments in the Draft ES include that design for the Proposed Development will comply with good practice in structural design including compliance with the Eurocodes and relevant British Standards. The following measures will be considered as part of the design and construction of the Proposed Development:
- The design will account for the expected ground conditions and design loads, accounting for the effects of climate change.
 - Materials selected for the above and below ground wind farm equipment will be suitably resistant to weather and Ground Conditions and have sufficient anticipated lifespan to ensure that they are unlikely to significantly degrade during the operational phase.
 - Underground electrical cables installed for the Proposed Development will not be oil-filled.
 - Buried cables will be protected from damage/ deterioration by the use of sand/ soil cushioning to avoid them being in contact with sharp stones/ objects, and placement of marker tape above the cables will help to alert anyone digging to their presence.

¹¹ The Construction (Design and Management) Regulations 2015

¹² The Control of Asbestos Regulations 2012

¹³ The Health and Safety at Work Act 1974

- 4.4.14 Risk assessments and method statements will include consideration of land contamination and ground instability in developing appropriate working methods and the use of appropriate Personal Protective Equipment (PPE).

Development of a Materials Management Plan (MMP)

- 4.4.15 A Materials Management Plan (MMP) will be developed as part of the CEMP, which will cover the use of excavated materials on the Proposed Development site. The MMP will be developed following the phases of appropriate risk assessment (as outlined above). There must be sufficient information to demonstrate that the objectives of preventing harm to human health and pollution of the environment will be met if materials are used in the proposed manner.
- 4.4.16 Temporary storage of soils known or suspected to contain contaminants will be carried out in accordance with the MMP. Materials reused must be suitable for use without further treatment. The MMP will outline where excavated non-waste materials will be reused in line with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). The MMP will include a declaration by a Qualified Person that the MMP has been completed in accordance with the DoWCoP and that best practice is being followed.
- 4.4.17 Additionally, permanently displaced soil will be reused within the Development Site where practicable in accordance with the MMP.

4.5 Soil Storage and Management

- 4.5.1 This section of the CEMP sets out the measures to be used to help protect soil resources during construction in order to maintain soil health and functions and avoid degradation of the existing topsoil and subsoil on the Development Site.

Protection of Soil Resources

- 4.5.2 A peat depth survey has been completed for the Northern and Southern Array and has confirmed the absence of peat. A Phase 2 Peat survey will be completed for relevant sections of the Forestry Access Track (i.e. where upgrades may be required) to collect data on where peat is present along the route. This data will inform detailed design, to enable the Proposed Development to avoid peat where possible. If peat cannot be avoided, then a Peat Management Plan will be developed for the Proposed Development.
- 4.5.3 Where the Proposed Development cannot avoid soils due to the excavation of turbine foundations, access tracks, compounds and crane hardstanding, areas with soils of lower sensitivity will be preferred to soil with the highest sensitivity (e.g. by design refinement and micro-siting). These elements of the Proposed Development which require removal of topsoil during construction and where topsoil cannot be reinstated will be kept to the minimum footprint required for the Proposed Development.
- 4.5.4 During topsoil stripping, machinery with low ground pressure will be used to minimise soil compaction, including during construction of the access tracks, the tracks will then be available for heavier vehicles to use to avoid impacts on other areas.
- 4.5.5 Soil stripped from the temporary construction compounds and the turbine foundation areas and any other areas on site where soil has to be stripped, will be stored in temporary mounds alongside each area, for re-spreading, following completion of turbine installation. Soils stripped from the crane hardstandings, will be stored alongside each area for future use in reinstatement.

Topsoil and Subsoil Storage

- 4.5.6 A Soil Management Plan would be prepared as part of the CEMP. A soil resources survey will be completed for the Development Site by a soil scientist / experienced soil specialist prior to construction and the findings of the soil resources survey will be used to inform the Soil Management Plan for soil handling and storage, which will allow excavated soil that is surplus to the Proposed Development to be retained in good condition and potentially reused offsite (in accordance with the MMP).
- 4.5.7 The following measures will be implemented in relation to topsoil and subsoil storage:
- Excavated topsoil will be stripped and stored separately from excavated subsoil to prevent mixing of soil materials which can reduce overall soil quality. Soil will be reinstated in reverse order to replace the original soil profile in the original order.
 - Storage and handling of soil will be informed by the Defra (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites¹⁴ to avoid damage to soil structure and help to minimise soil compaction.
 - Storage of excavated soils intended for reuse will be kept local to the point of excavation wherever possible, to avoid mixing of soil types. Soils will be reinstated at the earliest opportunity to avoid long-term (e.g., > six months) soil storage.
 - Soils and excavated spoil stockpiles would be stored at least 20 m away from watercourses wherever practicable and protecting stockpiles through covering, bunding or other suitable measures where required.
 - Topsoil and subsoil heaps would be maintained to reduce potential losses of soil materials throughout the duration of storage (e.g. maintaining soil heaps to prevent it blowing away in the wind or spilling into drainage ditches).
- 4.5.8 Where topsoil and subsoils are placed into storage, the following measures would be carried out to minimise the potential for compaction, especially in the bund core, and maintain biological activity:
- The soil would be placed in storage bunds, no more than 4m in height, and would be seeded with a suitable grass seed mix as soon as it is identified as likely to be left in storage for longer than 6 months.
- 4.5.9 Where this is not possible, the topsoil would be placed in storage bunds no more than 3m in height and would be seeded with a suitable grass seed mix, if anticipated to be left in storage for the winter or longer than 6 months.
- Temporary storage of soils will be carried out in accordance with the MMP. These documents will outline where excavated non-waste materials will be reused in line with the CL:AIRE DoWCoP. The MMP will include a declaration by a Qualified Person that the MMP has been completed in accordance with the DoWCoP and that best practice is being followed.
- 4.5.10 Where it is identified through soil resource and materials management planning that topsoil or subsoil cannot be reinstated at its original location, sampling and testing of excavated topsoil and subsoil will be completed in accordance with BS:3882:2015 and BS:8601:2013, respectively, at the earliest opportunity, to inform the reuse of these soils elsewhere within the Proposed Development or at a suitable offsite receptor site. Details

¹⁴ Department for Environment, Food & Rural Affairs (2018). Code of practice for the sustainable use of soils on construction sites. Available at: [Code of practice for the sustainable use of soils on construction sites - GOV.UK](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/682812/Code_of_practice_for_the_sustainable_use_of_soils_on_construction_sites.pdf)

of measures to be implemented during topsoil and subsoil replacement are detailed below.

Subsoil Handling During Replacement

- 4.5.11 Replacement of subsoil will be undertaken progressively following completion of construction activities within each working area to minimise the duration that soils remain disturbed.
- 4.5.12 Where possible, and for much of the subsoil activity at the Site, the subsoil will be placed directly onto restored ground. This reduces the potential for soil degradation.
- 4.5.13 Before replacement of any topsoil, the subsoil layer will be lightly graded to provide a suitable bed for topsoil replacement.

Topsoil Handling During Replacement

- 4.5.14 Plant and machinery engaged in topsoil replacement operations shall only travel across previously replaced subsoil, via clearly marked access routes to avoid damage to any areas where topsoil has been restored.
- 4.5.15 The soil shall be replaced as a single unit by 'loose tipping' methods to ensure that a uniform restored, and uncompacted soil profile is achieved.
- 4.5.16 Following completion of the resspreading of an area restored to topsoil, the surface will be lightly graded.
- 4.5.17 Implementation of a soil aftercare programme following reinstatement of land will be undertaken in accordance with measures detailed within the Soil Management Plan. The programme will include inspection and monitoring of restored areas to identify any evidence of erosion, settlement, compaction, drainage issues or poor vegetation establishment.

4.6 Ecological Management

ECoW

- 4.6.1 An Ecological Clerk of Works (ECoW) will be appointed prior to commencement of construction works on site. The ECoW will carry out pre-construction surveys and will advise on ecological and environmental matters during the construction of the wind farm and ensure compliance with the Ecological Construction Method Statement (ECMS), this will be prepared for pre-construction works.
- 4.6.2 Where necessary, Tool Box Talks (TBT) will be undertaken by the ECoW with the appointed contractor for the construction works and any sub-contractors, in order to ensure that there are no adverse impacts on any habitats or protected species.
- 4.6.3 The impacts that could arise during the Site enabling and construction phases are:
 - Habitat loss/damage at work locations;
 - Disturbance/killing/injury to species; and
 - Contamination from accidental spillages.

Pre-Commencement Surveys / Checks

- 4.6.4 Prior to the commencement of all pre-construction and construction works, the development footprint will be checked by a suitably qualified ecologist to ensure there have not been any significant material changes to the existing ecological interest of the Site and that no protected or notable species, which could be harmed by the development, have moved on site since the previous surveys were carried out. Should any protected species be found during future pre-commencement surveys and checks, not previously identified on-site, full details of mitigation measures to prevent their harm will be identified, and this document will be updated accordingly.

Ecology Method Statements

- 4.6.5 Ecology Method Statements will be prepared in support of the CEMP in the form of an ECMS. The ECMS will reflect the following:
- Vehicle movement outside of daylight hours would be restricted, vehicle speeds controlled, and operatives warned of the presence of certain species in order to reduce the risk of collisions.
 - All excavations would have sloped sides or have a means of escape for entrapped animals. Excavations to be checked each morning by operatives prior to work within the excavation.
 - Construction activities would be restricted to normal working hours (so largely avoiding the hours of darkness, particularly in the summer when species are most active).
 - Site lighting will be controlled to prevent incidental spillage on to features that may be used by nocturnal species.
- 4.6.6 The ECMS will outline the general mitigation measures and procedures that must be followed where there is a potential for bats, reptiles, otters, badgers, nesting birds, and Section 7 'Priority species' to be affected by the construction works. They will also explain the responsibilities of Pennant Walters and contractors, the legislative protection for these species and the measures required to avoid/minimise impacts on them and thereby the risk of criminal offences being committed.

General Ecology Mitigation

- 4.6.7 A number of general mitigation measures for ecology are required on site and include the following:
- Measures to prevent impacts on breeding birds include steps such as:
 - ▶ Clearance of construction and other working areas outside of the breeding bird season. Where this conflicts with other species, including licensing requirements, a pre-commencement check for active bird nests will be undertaken by a suitably qualified ecologist/ECOW immediately prior to the commencement of works;
 - ▶ The use of dedicated working areas and construction access routes; and
 - ▶ Any active bird nests in or immediately adjacent to working areas would be identified and provided with appropriate exclusion zones.
 - All construction activity will be limited to clearly-defined working areas, vegetation clearance will be kept to a minimum;

- Habitats which would be subject to temporary loss, will be re-vegetated and reinstated as soon as possible after construction.
- Storage of materials will be confined to areas of hard standing and appropriately located away from sensitive features, such as those areas of known value to protected species and watercourses
- Construction areas, including access tracks, site compounds and storage areas will be marked with signage/barriers or taped off at all times during construction activities. No access beyond these delineated boundaries is permitted without prior authorisation from the appointed contractor's site manager.
- Periodic ecological inspections and supervision of any sensitive works or receptors will be carried out by the ECoW.
- Tree protection fencing will be implemented around root protection zones when working near mature trees and hedges.
- All site staff will be briefed on procedures to be implemented if any protected species are found within the working area. In the event that a protected species is encountered during the course of the works, all works will be stopped, and the sighting will be reported to the site management team, who will liaise with the ECoW.
- Some instances of habitat loss would be temporary and reinstated post construction within working areas and temporary construction compounds. Existing Forestry access points, roads and tracks have been used where possible to minimise vegetation loss.

4.6.8 Construction works shall be micrositied to avoid areas supporting, or with the potential to support, marsh fritillary larval food plants, including suitable but unoccupied habitat identified within the works area. An ECoW shall oversee final siting decisions and ensure sensitive habitat is protected from disturbance throughout the construction period.

Biosecurity Measures

4.6.9 Management measures to avoid the introduction or spread of Invasive Non-Native Species (INNS), such as boot wash stations, will be set out in the INNS Management Plan, which would be prepared prior to the commencement of construction.

4.7 Archaeology & Cultural Heritage Management

Site Specific Constraints

Designated Historic Assets

4.7.1 There are no designated historic assets located within either the Northern or the Southern Array. The existing Forestry Access Track crosses the western boundary of the Rhondda registered historic landscape (Cadw: HLW (MGI) 5) and traverses through the boundary of the Clawdd Mawr, Mynydd Caerau scheduled monument (Cadw: GM231).

Non-Designated Heritage Assets

4.7.2 Fifty-three non-designated historic assets have been identified within the Northern and Southern Arrays through HER and NMRW records, LiDAR analysis and a site walkover survey undertaken by WSP in June 2026.

General Archaeology Requirements

4.7.3 The following general archaeology requirements should be followed:

- During the initial phase of topsoil and subsoil stripping of the turbine bases, substation, control building and temporary compound, archaeological monitoring could be required. The scope of these works will be determined through consultation with relevant stakeholders;
- The Site Management Team and all site-based staff (including subcontractors) must take all reasonable actions to protect recognised cultural heritage assets. Staff must also be vigilant for potential archaeological discoveries; and
- If suspected archaeological finds are made, these will be protected by fencing off the area until an Archaeologist is contacted.

4.7.4 If any human remains or treasure is found, then the following guidance should be followed:

Human Remains

4.7.5 In the event of human remains being encountered, work will cease, and the area made secure. The relevant local authority will be informed, and a licence will be obtained from the Ministry of Justice (if required under the 1857 Burials Act) prior to any removal of human remains.

Treasure

4.7.6 The Treasure Act 1996¹⁵ sets out a legal requirement that archaeological material which meets the statutory definition of treasure must be reported to the local coroner within 14 days. The definition of treasure as set out by the Act and modified by the Treasure (Designation) Order 2002 is:

- Any metallic object, other than a coin, provided that at least 10 per cent by weight of metal is precious metal (that is, gold or silver) and that it is at least 300 years old when found. If the object is of prehistoric date it will be treasure provided any part of it is precious metal;
- Any group of two or more metallic objects of any composition of prehistoric date that come from the same find (see below);
- All coins from the same find provided they are at least 300 years old when found (but if the coins contain at least 10 per cent of gold or silver there must be at least ten of them);
- Only the following groups of coins will normally be regarded as coming from the same find: (a) hoards that have been deliberately hidden, (b) smaller groups of coins, such as the contents of purses, that may have been dropped or lost, and (c) votive or ritual deposits;
- Any object, whatever it is made of, that is found in the same place as, or had previously been together with, another object that is treasure¹⁶; and

¹⁵ UK Government (1996). Treasure Act 1996. (Online) Available at: <http://www.legislation.gov.uk/ukpga/1996/24/contents> (Accessed April 2022)

¹⁶ An object or coin is part of the 'same find' if it is found in the same place as, or had previously been together with, the other object. Finds may have become scattered since they were originally deposited in the ground.

- Any object that would previously have been treasure trove but does not fall within the specific categories given above. Only objects that are less than 300 years old, that are made substantially of gold or silver, that have been deliberately hidden with the intention of recovery and whose owners or heirs are unknown will come into this category.

5. Site Environmental Inspection and Auditing Procedures

5.1 Site Environmental Inspections

- 5.1.1 Environmental inspections of the project will be carried out on a regular basis and the results recorded on form MS-HSSE-1201-4 (see Annex A). Such inspections will vary according to the individual receptor. These inspections will consider the environmental aspects and potential construction impacts detailed above in Section 3. A suitably qualified ECoW will be appointed to supervise and inspect works as necessary. More detailed audits will be carried out by the Site Management Team periodically in accordance with Pennant Walters's protocol. Such audits will be undertaken in order to ensure compliance with the approved planning conditions and all other legal requirements.
- 5.1.2 Records of all training carried out at the Proposed Development (including inductions) will be retained and made available for viewing during environmental audits if required.
- 5.1.3 If a complete failure or absence of a required CEMP element is discovered during site audits, a major non-conformance will be raised. The project will have seven (7) days from the date of issue of the audit report to recover the situation and put measures in place to prevent its re-occurrence.
- 5.1.4 If an area of weakness is identified when an element of the system is not being carried out correctly, then a non-conformity will be raised, and the project will be given one month from the date of issue of the report to rectify the situation.

5.2 Environmental Audits

- 5.2.1 A planned programme of compliance audits will verify the integrity and effectiveness of the environmental management system used throughout this project and may include site visits. The purpose of any visit includes:
- Ensuring that this CEMP and all other environmental commitments are being adhered to and that the relevant documentation is being completed;
 - Ensuring that progress towards environmental objectives and targets is being monitored;
 - Ensuring that legislation and all other requirements are being complied with;
 - The audit report shall make recommendations for improvement and identify the appropriate personnel and timescales for completing these actions. The contents of the report shall, if necessary, be discussed at site HSSE meetings; and
 - Following the audit, if deemed necessary an investigation shall be instigated and corrective actions taken. The effectiveness of any resultant actions carried out will be assessed by the project at an appropriate time scale.

6. Document Control and Environmental Nuisance Complaints

6.1 CEMP Document Control

- 6.1.1 This CEMP is a working document. **Annex B** contains a CEMP Revision Control Register which will be maintained by the appointed contractor's Environmental Management Team. The register will show any revision numbers, revision details and dates for the main CEMP and all Appendices/Annexes.

6.2 Register for Environmental Nuisance Complaints

- 6.2.1 Should any complaints be received which are of an environmental nature, then these would be recorded on the complaint register (see **Annex C**). This register will be maintained within the environmental file on site and made available during environmental audits if required. All environmental complaints will be discussed as part of regular environmental progress meetings.

7. Re-Instatement Measures

- 7.1.1 Any post construction requirements (for example re-instatement works) are to be confirmed with the appointed contractor for the construction works and agreed with Local Council/landowner/statutory bodies as appropriate. Any such requirements would be documented in the following table:

Table 7.1 Project Completion Requirements

Post Construction Requirements	Action	Responsibility

- 7.1.2 Whilst, as noted above, re-instatement measures will be confirmed with the appointed contractor in due course, reinstatement will occur as soon as the Proposed Development construction is finished to minimise topsoil storage time and potential for erosion. In addition, and set out below are some general re-instatement measures for the appointed contractor to follow:
- as each area of the Proposed Development is completed, that part of the Development Site will be reinstated using selected excavated materials arising from the track, crane hardstanding and turbine foundation excavations;
 - as far as practicable, and subject to environmental and hydrological considerations, such materials will be reused throughout the Development Site for reinstatement and landscaping to minimise the requirement for importing/exporting material;
 - site reinstatement of all peripheral areas of the site disturbed during construction will be restored, as far as is practicable, to their condition prior to commencement of the development using stripped and stored topsoil/subsoil;
 - all temporary works and fences will be removed. Where necessary, stored topsoil will be spread, rolled and re-seeded and the area put back into its former use;
 - wind turbine foundations will be backfilled and reinstated, subject to relevant drainage considerations, using stored excavated subsoil and topsoil and the surrounding land returned to its former use;
 - the site access tracks and crane hardstandings will be graded following completion of construction works;

- the temporary construction compounds will be restored at the end of the construction period. Reinstatement will involve removing the imported material and underlying geotextile if installed. Stored subsoil and topsoil will be spread, rolled and re-seeded and the area put back into its former use; and
- upon completion, all construction plant will be removed from the site.

7.1.3 An audit will be undertaken to ensure that any project completion requirements have been satisfactorily completed and will be documented in **Table 7.2** below

Table 7.2 Audit Record

Audit	Date Undertaken	Summary of Findings	Responsibility

Annex A

Environmental Inspection Form

Contract Name		Contract Number		
Date:	Time:	Area:		
		Yes	No	N/A
Waste				
Are Skips/Containers in good condition?				
Are skips overfull?				
Are they clearly labelled with the contents?				
Are the waste streams (general, hazardous, and recyclable waste) segregated correctly?				
Drums, Cans etc.				
Are drums stored in safe area when not in use?				
Are they sealed to prevent leaks?				
Are funnels, drip trays used during filling of plant?				
Bunds / Bowsers / Containment				
Are bunds in good condition and free from excess oil / water / debris?				
Are Drains covered near operations?				
Are Bowsers Securely locked while				
Plant				
Is plant in good condition?				
Are any spills evident				
Are drip trays being used when refuelling?				
Are drip trays located beneath mobile plant?				
Are adequate spill kits available and labelled?				
Is unused mobile plant sited in plant compound?				
Are signs and warnings visible?				
Is the mobile hand pump in good condition?				
Nuisance				
Are machines switched off when not used				
Any excessive noise				
Is there adequate lighting				
Is there any silt / particulates / oil / grease or colour in any of the watercourses?				
Are stockpiles / mounds etc not located close to any sensitive receptors such as watercourses?				

Contract Name		Contract Number		
Date:	Time:	Area:		
		Yes	No	N/A
Is there any excessive dust? Are control measures being adhered to?				
Is there any evidence of contamination on public roads (mud, etc)				
Is there any evidence of interference with vegetation?				
Is there any evidence of damage to wildlife?				

Annex B

CEMP Control Revision Register

Date	Revision	Author

Annex C

Register for Environmental Nuisance Complaints

Complaint No.	Date	Complainant	Description of complaint	Actions taken	By whom	Accepted yes/no	Completion date
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

