



Pennant Walters

Mynydd y Glyn Wind Farm

Draft Construction Environmental Management Plan



This report was prepared by WSP Environment & Infrastructure Solutions UK Limited (formerly known as Wood Environment & Infrastructure Solutions UK Limited), company registration number 02190074, which is carrying out these services as a subcontractor and/or agent to Wood Group UK Limited

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Document revisions

No.	Details	Date
A	Draft CEMP	12/09/22
B	Final CEMP	21/10/2022

Executive Summary

This Construction Environmental Management Plan (CEMP) sets out the specific environmental management requirements and relevant guidance for contractors working on the proposed Mynydd y Glyn Wind Farm.

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 best 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), 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; and
- 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 Construction Environmental Management Plan (CEMP) relates to the proposed construction and operation of the Mynydd y Glyn Wind Farm near Porth. This Draft CEMP will accompany the Draft ES for statutory consultation.
- 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 CEMP has been produced to demonstrate that Pennant Walters 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 Environmental Statement (ES) are implemented appropriately.
- 1.1.4 Revisions to this CEMP shall be agreed and approved by Pennant Walters and recorded. 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 Project

- 1.2.1 The Mynydd y Glyn Wind Farm development (hereafter referred to as the Wind Farm) comprises of the following:
- up to seven turbines;
 - internal wind farm tracks;
 - hard standing areas e.g., crane pads and cabling;
 - laydown and storage areas;
 - substation and transformer housing;
 - temporary contractor compounds;
 - grid connection where included in the Site boundary; and
 - new access and junction off the highway.
- 1.2.2 The Site lies within the Rhondda Cynon Taf County Borough Council (RCTCBC) administrative area and its boundary is located approximately 600m from the south-eastern edge of the village of Pant (National Grid Reference: ST 03626 89459). The Site consists of semi-improved acid grassland used for grazing livestock, with steep-sloping sides. The Site of the Proposed Development is located on the summit and upper slopes of Mynydd-y-Glyn to the south of Rhondda River.

- 1.2.3 The Proposed Development is a wind farm consisting of a maximum of seven wind turbines, each with a three-bladed rotor with a diameter of up to 136m, a hub height of up to 97.5m and maximum height to blade tip of 155m.
- 1.2.4 The applicant has received an offer of a grid connection from Western Power Distribution (WPD) as the Distribution Network Operator (DNO). The connection is planned between the on-site substation and the electricity grid at Upper Boat. This connection will be comprised of two components, the first of which is an overhead line to the south eastern boundary of the Site towards Upper Boat, subsequently the line will be undergrounded to the connection point. The underground cable will be delivered by WPD, whilst the overhead Line will be consented as part of this DNS process.
- 1.2.5 The general location, site boundary and layout of the Wind Farm are shown in Appendix A. Through the EIA process, the majority of environmental impacts were avoided, minimised, and mitigated, and therefore are embedded into the Proposed Development. However, as identified in the Draft Environmental Statement (ES), there are potential impacts that cannot be mitigated through design and therefore further environmental mitigation measures are required to be put in place during the construction of the Wind Farm. These measures are described in the document.

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 Wind Farm 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 wind farm; 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 Wind Farm.

2. Environmental Policies, Corporate Responsibilities and Emergency Procedures

2.1 Introduction

- 2.1.1 The overall responsibility for implementation of this CEMP lies with Pennant Walters and their appointed contractor for the construction works: the successful implementation of the CEMP will ensure that all relevant environmental commitments and responsibilities are adhered to. Pennant Walters are 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 Pennant Walters. This CEMP fully accords with all legislative requirements.

2.2 Appointed Contractor

- 2.2.1 The appointed contractor for the construction of the Wind Farm (working on behalf of Pennant Walters) 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 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 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 contractor 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 Emergency Procedures

- 2.4.1 All environmental incidents must be reported to the Site Management Team who will decide whether the incident is reportable to NRW or other Regulators.
- 2.4.2 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.
- 2.4.3 In addition to notification of any environmental incident via the National Pollution Hotline number (0800 807060), the local NRW Office (Porth) must be contacted and informed; enquiries@naturalresourceswales.gov.uk
- 2.4.4 All emergency response arrangements will be included in the construction site induction and communicated to the relevant regulatory bodies if required.

Spillage Control

- 2.4.5 For plant/equipment leaks:
- STOP the source of the spill or leak if possible;
 - CONTAIN the spill using spill kits, sand or soil;
 - DIVERT the spill away from drains and watercourses;
 - CLEAN up the spill. Put all used spill kit materials and contaminated soil in a waste bag and dispose of as hazardous waste;
 - REPORT the spill to your supervisor;
 - REPLENISH spill kit after use; and
 - ANY pollution of a watercourse to be reported immediately to the appointed contractor's Project HSSE Manager.
- 2.4.6 Should there be any incidents then these would need to be reported to the appointed contractor's site manager via the following 24hr emergency contact line on.

Flood Emergency Response

- 2.4.7 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 IMMEDIATE 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

2.4.8 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;
- discovery of archaeological or historic remains; and
- near misses – where events could have led to a minor or major incident.

2.4.9 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 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 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. Further guidance on surface and groundwater management can be found in the Water Management Plan at **Appendix B**.

3.2.2 Hours of working will be limited to take place between 07:00 to 19:00 hours on weekdays and 07:00 to 13:00 on Saturdays, with no working taking place on Sundays or bank holidays.

3.2.3 There are various contingency plans in place in this 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 Wind Farm.

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 from A4233 onto the adjacent 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

Item	Details	Staff Responsible
	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.	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. Money can even be made from this!
- waste must not be kept in a corroded or worn container;

- 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.

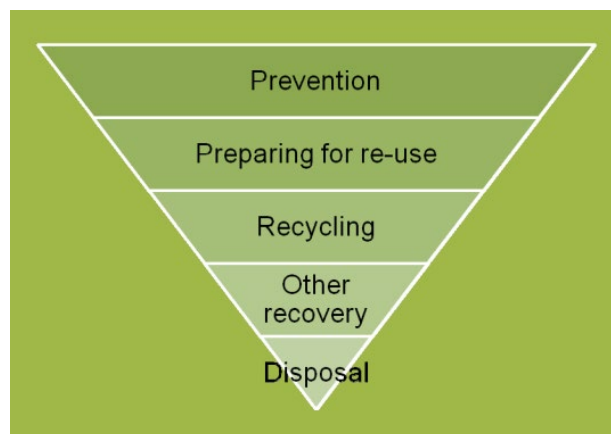
Waste Sorting, Storage and Recycling

- 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 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 Wind Farm.
- 3.4.4 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

- 3.4.5 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 \(gov.wales\)](https://www.gov.wales)

[copyright page for consultations](#)

Importing of Waste

- 3.4.6 Should any waste need to be imported to site during the construction works they would be stored and used only in accordance with either a waste management licence or exemption under The Waste (England and Wales) Regulations 2011¹. Similarly, any waste removed from site would be disposed of at suitably licensed or exempt waste management facilities in accordance with these regulations.

Sewage

- 3.4.7 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 appointed site contractor 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 project 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 A Water Management Plan (WMP), has been prepared in support of the CEMP and is attached at **Appendix B**.
- 3.5.7 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;

¹ [Applying the waste hierarchy: guidance | GOV.WALES](#)

- 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 (**Section 3.4**).

Lighting Columns

- 3.5.8 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.
- 3.5.9 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.

3.6 Details for Post-Construction Restoration/Reinstatement of Temporary Working Construction Areas Not Required During the Operation of the Development

- 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 soft landscape elements to maximise biodiversity and appropriate to the overall land use as an area of upland grazing. These objectives are compatible with the Outline Habitat Management Plan (HMP), which will be submitted alongside the Final ES.

3.7 Construction SuDS

- 3.7.1 Throughout the construction phase of the development, Sustainable Drainage Systems (SuDS) will be provided. This will help to ensure that contaminated surface water runoff, arising from earthworks, roads, drainage, compounds and any other associated infrastructure, do not pollute any watercourses. Further details are provided in **Appendix B**.

3.8 Water Abstraction

- 3.8.1 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.

3.9 Public Safety and Access

- 3.9.1 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.
- 3.9.2 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.
- 3.9.3 There is a limited Public Rights of Way (PRoW) network within the Site. There is a principal PRoW linking Porth in the Rhondda Valley to Langton Court Farm, one of the closest properties to the south-east. A large area within the western and eastern parts of the Site is Access Land. Some Public Rights of Way (PRoW) will be required to be temporarily closed during construction. Safety signs will also be required during construction and operation.
- 3.9.4 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.

4. Topic-Specific Management Plans

4.1 Dust Management

4.1.1 The main activities involved in this project 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 start of 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 Development 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 HGV's on tracks and the C120;
- 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 Environmental 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 in 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;
- the A4233 Trebanog Road to the west of the Site will be monitored regularly and a road sweeper will be deployed along the A4233 should that be deemed necessary by Rhondda Cynon Taff County Borough Council or the site manager.
- 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 works to construct the site and associated grid connection will be undertaken in accordance with best practice as described in a CEMP. Embedded measures to minimise noise and vibration from the construction of the 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	Compliance mechanism
Construction			
All	Construction noise and vibration effects from site works	All construction activities undertaken in accordance with good practice as set out in BS5228-1:2009+A1:2014	Construction Environmental Management Plan (CEMP)
All	Construction noise and	All employees on the construction site will be advised of quieter methods of operating plant	CEMP

Receptor	Potential changes and effects	Embedded measures	Compliance mechanism
	vibration effects from site works	and tools. Noise control measures (silencers, mufflers, any noise barriers, etc.) are to be subject to regular inspection and maintenance.	
All	Construction noise and vibration effects from site works	Where practicable, for any particular activity, suitable plant, machinery and working practices will be adopted.	CEMP
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.	CEMP

4.3 Water Management Plan

4.3.1 A Pollution Prevention Plan (PPP) and surface water and groundwater management measures are included within the Water Management Plan (WMP) in support of the Draft CEMP and is provided at **Appendix B**.

4.4 Soil Storage and Management

4.4.1 Soil stripped from the temporary construction compound and the turbine foundation area 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.

4.4.2 The following measures will be employed on site to store and manage soil during the construction works:

Topsoil and Sub Soil Storage

4.4.3 Storage and handling of soil will be informed by the Defra (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites to avoid damage to soil structure and help to minimise soil compaction.

4.4.4 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.

4.4.5 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.

4.4.6 If unexpected contamination or suspected contamination is detected, additional testing and risk assessment will be required to determine appropriate measures. Materials will be segregated, where possible, to prevent cross-contamination occurring and will only be reused if confirmed to be suitable for use and in accordance with other requirements of the Materials Management Plan (MMP).

- 4.4.7 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
- 4.4.8 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 5m in height, and would be seeded with a suitable grass seed mix if anticipated to be left in storage for longer than 6 months.
- 4.4.9 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. This document 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.
 - permanently displaced soil will be reused within the Proposed Development application boundary where practicable in accordance with the MMP.

Sub Soil Handling During Replacement

- 4.4.10 Where possible, and for much of the sub soil activity at the site, the subsoil will be placed directly onto restored ground. This reduces the potential for soil degradation.
- 4.4.11 Before replacement of any topsoil, the subsoil layer will be lightly graded to provide a suitable bed for topsoil replacement.

Topsoil Handling During Replacement

- 4.4.12 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.
- 4.4.13 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.
- 4.4.14 Following completion of the respreading of an area restored to topsoil, the surface will be lightly graded.

4.5 Ecological Management

ECoW

- 4.5.1 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 Ecology Method Statements (**Appendices C-D**).

4.5.2 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.

4.5.3 The main ecological impacts that could arise from this development are:

- habitat loss/damage at work locations;
- disturbance/killing/injury to species; and
- contamination from accidental spillages.

Ecology Method Statements

4.5.4 Ecology Method Statements have been prepared in support of this CEMP and are appended to this CEMP (**Appendices C-D**). These outline the general mitigation measures and procedures that must be followed where there is a potential for reptiles, otters, badgers, nesting birds and Section 7 'Priority species' to be affected by the construction works. They 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

4.5.5 A number of general mitigation measures for ecology are required on site and include the following:

- 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; and
- 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 siting will be reported to the site management team, who will liaise with the ECoW.

4.6 Archaeology & Cultural Heritage

4.6.1 A Written Scheme of Investigation (WSI) for archaeological mitigation will be prepared in response to any potential requirements of the planning permission. The details of the WSI will be agreed with the Glamorgan-Gwent Archaeological Trust (GGAT) who advise Rhondda Cynon Taf County Borough Council, and this will help to ensure that any Archaeological or Cultural Heritage assets are not damaged.

- 4.6.2 The WSI will set out the agreed method statement for archaeological measures pertaining to the construction of the wind farm. This will include the protection and temporary fencing of known non-designated assets located within the Development Site in proximity to construction works. The WSI may allow for observation on the archaeological resource by targeting key areas. The mitigation strategy (archaeological measures) will be devised to be appropriately responsive to the potential nature of the archaeological resource and the character of the proposed works.

Site Specific Constraints

Designated Heritage Assets

- 4.6.3 No designated heritage assets are located within the Development Site and so none will be affected by the construction works.

Non-Designated Heritage Assets

- 4.6.4 Three non-designated heritage are located within the Development Site. Three additional archaeological features were recorded through walkover survey. The assessment concluded that heritage assets within the Development Site were unlikely to indicate further archaeological survival within the Development Site and that any such remains outside the area of known archaeological features would likely be isolated survivals.

General Archaeology Requirements

- 4.6.5 The following other general archaeology requirements should be followed:
- 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;
 - if suspected archaeological finds are made, these will be protected by fencing off the area until an Archaeologist is contacted; and
 - as required by law, any coins, pottery, or bones discovered during construction works will be left in situ.
- 4.6.6 If any human remains or treasure is found, then the following guidance should be followed:

Human Remains

- 4.6.7 In the event of human remains being observed, work will cease, and the area made secure. Rhondda Cynon Taff County Borough Council will be informed, and the relevant permissions will be obtained from the Ministry of Justice (if required under the 1857 Burials Act) prior to any removal of human remains.

Treasure

- 4.6.8 The Treasure Act 1996² 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:

² <http://www.legislation.gov.uk/ukpga/1996/24/contents>

- 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 treasure³; and
- 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.

³ 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.

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 Appendix E). 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' 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 Wind Farm (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; and
 - 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. **Appendix F** 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.

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 **Appendix G**). 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

1.1.1 Whilst, as noted above, re-instatement measures will be confirmed with the appointed contractor in due course, reinstatement will occur as soon as the Wind Farm 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 Wind Farm is completed, that part of the 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 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 agricultural 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 agricultural use;
- the site tracks and crane hardstandings will be graded following completion of construction works;
- the site compound 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 agricultural use; and
- upon completion, all construction plant will be removed from the site.

7.1.2 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

Appendix A

Site Plans

Appendix B

Water Management Plans

Appendix C

Reptile Method Statement

Appendix D

General Protected Species Method

Statement

Appendix E

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?					

Appendix F

CEMP Control Revision Register

Date	Revision	Author

Appendix G

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							

Complaint No.	Date	Complainant	Description of complaint	Actions taken	By whom	Accepted yes/no	Completion date
8							
9							
10							

