Technical Appendix 2.1: Outline Construction Environmental Management Plan

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1.1 Introduction

1.1.1 This document provides a framework for a Construction Environmental Management Plan (CEMP) that will be finalised pre-construction. This Outline Construction Environmental Management Plan (OCEMP) has been prepared as part of the Environmental Impact Assessment (EIA) process for the Proposed Development and this document forms a Technical Appendix to the Environmental Impact Assessment Report (EIAR) submitted as part of the application for consent for the Proposed Development.

1.1.2 The Proposed Development is a renewable energy development comprised of up to eight wind turbines, a Battery Energy Storage System (BESS) and associated infrastructure adjacent to Sullom Voe Oil Terminal (SVT) and the Shetland Gas Plant in Shetland, Scotland. The assessment is based on the Proposed Development as described in **Chapter 2: Proposed Development (EIAR Volume 2)**.

1.1.3 The finalised CEMP would describe the environmental management and construction methods to be employed during the construction of the Proposed Development. This draft OCEMP would be updated with detailed information and finalised prior to the commencement of construction, in consultation with SIC and other the relevant Statutory Consultees (such as Historic Environment Scotland (HES), NatureScot, and the Scottish Environmental Protection Agency (SEPA)), taking account of relevant approved plans and relevant planning conditions.

1.1.4 The Contractor(s) appointed to construct the Proposed Development would prepare detailed method statements which would be incorporated into the final CEMP.

Objective of the Document

1.1.5 The requirement to produce a detailed CEMP, which is in accordance with the framework set out in this OCEMP, would form part of any contract for the construction works for the Proposed Development. The management measures, method statements and referenced good practice guidance and legislation will form the basis of the detailed design to be prepared by the Principal Contractor.

1.1.6 The CEMP will provide:

- schedule of all construction stage mitigation measures required to address likely significant effects identified in the Environmental Impact Assessment Report (EIAR);
- schedule of all additional construction stage good practice management measures included as part of the proposed construction work, in line with industry good practice guidance;
- schedule of roles and responsibilities for delivering the requirements of the CEMP, including a statement of responsibility to 'stop the job/ activity' if in potential breach of a mitigation measure or legislation occurs;
- method statement for monitoring, auditing, and templates for reporting and communication of environmental management performance on-site and with the Applicant, planning authority and other relevant parties as would be required either by condition or for regulatory compliance;
- construction stage environmental management measures, based on both compliance with relevant regulations and relevant good practice including but not limited to:
  - The Environmental Authorisations (Scotland) Regulations 2018[1], as amended, and the requirement for Construction Site Licence[2] (and Pollution Prevention Plan);
  - NatureScot (2019) Good Practice During Wind Farm Construction, A joint publication by Scottish Renewables, NatureScot, SEPA, Forestry Commission Scotland and Historic Environment Scotland, Marine Scotland Science, 4th Edition[3];
  - Netregs, Guidance for Pollution Prevention (GPP)[4];
  - CIRIA Publications including CIRIA C768 (Guidance on the construction of SuDS), CIRIA C753 (The SuDS Manual)[5];
  - NatureScot (2015) Constructed Tracks in the Scottish Uplands, 2nd Edition[6]; and
  - a template for the production of detailed and task/ site specific plans for on-site components of the construction work.

1.1.7 It is anticipated that specific mitigation plans and additional management measures will be required to address archaeology, biodiversity (protected habitats and species), surface water management and pollution prevention, watercourse crossings, waste, access arrangements, soil and peat management, construction and decommissioning nuisance (noise, dust), and public liaison.

Level of Information

1.1.8 The Proposed Development is at pre-consent stage and therefore no contracts have been awarded for construction work and ground investigation reports are not yet available. Consequently, the OCEMP provides only the framework for the content to be included in the finalised CEMP. Task-specific method statements incorporating the requirements of this OCEMP would be developed by the selected contractors post-consent and prior to work starting on-site.

1.2 The Proposed Development

Project Description

1.2.1 The 'Site', as defined by the application boundary **on Figure 1.1: Site Location (EIAR Volume 3a)**, covers a total area of approximately 303 hectares (ha) and is located on land east of Sullom Voe Oil Terminal and the Shetland Gas Plant in Shetland, Scotland.

1.2.2 Settlements within approximately 500 m the Site are limited to scattered dwellings, in areas such as Toft, Brough and Garths Voe. Small settlements such as Firth and Mossbank are located approximately 900 m and 2.1 km from the Site, respectively.

1.2.3 The Site comprises an undulating plateau that ranges in elevation from mean high-water level at its northernmost extent by Ay Wick, to approximately 110 m Above Ordinance Datum (AOD) at the Hill of Crooksetter located east of the centre of the Site. Towards the southern end of the Site the topography gently undulates between 40 m AOD and 90 m AOD. The Site is drained by a number of natural burns such as the Aywick Burn, along with artificial drainage ditches installed historically in an attempt to lower the water table and improve grazing conditions

1.2.4 The Site comprises a combination of open heather moorland and grassland on peaty soils, which is used for rough grazing. The Site is typical of the wider landscape which exhibits a similar combination of hilly

[1] Scottish Government. The Environmental Authorisations (Scotland) Regulations 2018. Online. Available at: The Environmental Authorisations (Scotland) Regulations 2018 [Accessed 14/01/2026]

[2] SEPA, 2021. Supporting Guidance WAT-SG-75. Sector Specific Guidance: Water Run-Off from Construction Sites. Online. Available at: https://www.sepa.org.uk/media/340359/wat-sg-75-v3.pdf [Accessed 14/01/2026]

[3] NatureScot, 2019. Guidance- Good Practice during Wind Farm Construction. Online. Available at: https://www.nature.scot/guidance-good-practice-during-wind-farm-construction [Accessed 16/01/2026]

[4] NetRegs, 2024. Guidance for Pollution Prevention. Online. Available at: https://www.netregs.org.uk/tools/guidance-for-pollution-prevention-gpp-documents/ [Accessed 16/01/2026]

[5] SUSDRAIN, URL: https://www.susdrain.org/resources/ciria-guidance.html [Accessed 16/01/2026]

[6] NatureScot, 2015. Constructed tracks in the Scottish Uplands. Online. Available at: https://www.nature.scot/doc/archive/constructed-tracks-scottish-uplands [Accessed 16/01/2026]

coastal terrain, small coastal islands and rocky coastal edges that mark the edge of the open waters of numerous voes (Orka Voe, Garths Voe, Tofts Voe and Firths Voe).

1.2.5 The main elements of the Proposed Development would be:

- up to eight wind turbines with a maximum tip height of 200 m and a combined generation capacity of >50 MW;
- a total of approximately 7.5 km of new permanent on-site access tracks with associated watercourse crossings, and approximately 0.4 km of temporary access tracks to service the borrow pit during the construction phase;
- a site entrance to the west of the site for construction and operation, designed to accommodate abnormal indivisible loads (AIL) required for turbine component delivery;
- underground cable arrays within the Site connecting the turbines to the on-site substation;
- an on-site substation and control building;
- temporary construction compounds and laydown areas; and
- a BESS with a footprint of up to 0.5 ha, including ancillary equipment and co-located with the on-site substation.

1.2.6 In addition, the following ancillary works would be necessary:

- habitat management areas including peatland habitat restoration and riparian tree/scrub planting;
- extraction of rock from a borrow pit and reinstatement of the borrow pit to an agreed restoration design;
- temporary on-site concrete batching plant;
- off-site works to facilitate the delivery of abnormal loads (e.g. construction of over-run areas and temporary modification to street furniture etc); and
- permanent hardstanding to accommodate remote sensing equipment for measuring wind conditions (to be co-located with the on-site substation and BESS).

Schedule of Mitigation

1.2.7 **Chapter 14: Schedule of Environmental Mitigation (EIAR Volume 2)** outlines the various mitigation measures aimed at offsetting the potential impacts of the Proposed Development.

1.2.8 For each mitigation measure identified, the specific mechanism by which it is to be adopted, implemented, or enforced, as well as the timeframe within which the mitigation measure is to be carried out has been detailed.

1.2.9 It would be mandatory for these mitigation measures to be implemented either before or during the construction phase of the planned development.

1.3 Communication Protocol

Roles and Responsibilities

1.3.1 The CEMP would be provided to the contractors appointed to construct the Proposed Development and would form part of the documentation required to ensure compliance not only with planning requirements but also environmental and other legislative requirements. This outline CEMP takes account of and refers to information contained within the EIA Report.

1.3.2 The CEMP would form part of the specification and contract for the works that the Applicant would impose on their contractors as contractual obligations.

1.3.3 The selected contractor would develop this outline CEMP with respect to the following:

- Task-specific method statements.
- An application to Scottish Environment Protection Agency (SEPA) for a Environmental Authorisation (Scotland) Regulations (EASR) Construction Site Runoff Permit.
- Site Waste Management Plan.

1.3.4 The implementation of the CEMP (including procedures, record keeping, monitoring, and auditing) would be overseen by an environmental professional, referred to as the Ecological Clerk of Works (ECoW). Additional technical experts (ecologists, archaeologists, etc.) would be appointed to support the ECoW as required.

1.3.5 Monthly environmental management meetings would be held between the ECoW, Planning Monitoring Officer (PMO), the Principal Contractor and the Applicant to provide updates on environmental mitigation measures and performance and identify actions for improvement where necessary.

1.3.6 More detail on specific roles and responsibilities is provided in **Table 1.3.1** below.

Table 1.3.1: Roles and Responsibilities

Role	Responsibility
The Applicant	The Applicant shall take overall responsibility for compliance with environmental matters and shall appoint a suitably experienced project manager to oversee the project's construction phase. The Applicant's project manager shall ensure that the key responsibilities in the outline CEMP are appropriately delegated to the Principal Contractor, ECoW, EnvCOW, and others. The Applicant shall be responsible for developing this OCEMP into a full CEMP.
Principal Contractor	The Principal Contractor shall be responsible for the construction of the Proposed Development. The Principal Contractor shall appoint suitably experienced staff, including a project manager and dedicated environmental manager who shall be responsible for providing technical expertise to the Principal Contractor, in particular with regards to drainage design and environmental mitigation.
Ecological Clerk of Works (ECoW)	The Applicant shall appoint an ECoW prior to works commencing on-site. The ECoW would be focused on works supervision, advice and conducting walkovers prior to plant movement and habitat removal.
Environmental Clerk of Works (EnvCoW)	The EnvCoW shall specialise in hydrology and drainage. The key focus of the EnvCoW shall be ensuring that that environmental mitigation measures are in place ahead of works starting, for example cut-off ditches, settlement lagoons, silt fencing. The EnvCoW will regularly review the installed drainage and mitigation works to ensure it meets the requirements of the CEMP.
Planning Monitoring Officer	The PMO is responsible for reviewing the Applicant's compliance with the project's planning conditions and reporting back to the Planning Authority. The PMO shall visit site on a monthly basis and prepare a monthly report. A key focus for the PMO shall be the compliance with the CEMP and protection of the environment. The PMO shall be an independent environmental specialist selected by the Planning Authority.

Recording and Reporting

1.3.7 The CEMP would set out the requirements for recording and reporting all aspects of environmental management, for example:

- minutes and attendance record of start-up meeting (on-site meeting prior to commencement of construction works);
- an environmental risk register;
- minutes of weekly meetings covering environmental (ecology, archaeology, hydrology) issues (meetings may be combined with regular construction progress meetings);
- a communication plan;
- record of toolbox talks;
- dust/noise monitoring records;
- site waste and materials records;
- water quality monitoring records (if required); and

- licensing and consents.

1.3.8 The CEMP would be agreed with SIC and relevant statutory consultees before adoption.

Environmental Audits

1.3.9 The CEMP would set out the programme of environmental audits, including audits of subcontractors to be undertaken by the contractor, on a quarterly basis (as a minimum) and provides an audit report within two weeks of the audit being undertaken.

1.3.10 The contractor would develop a template for completing and reporting audits for the agreement of the Applicant prior to the commencement of site works.

Incidents and Near Misses

1.3.11 The contractor would maintain a register of all environmental incidents or near misses, each supported by an Environmental Incident Report Form. This would document the nature, date and time of the incident, corrective action(s) taken, and details of any contact with regulatory agencies. All incidents will be reported to the Applicant within 24 hours of the incident occurring. The register would be reviewed at regular intervals and reported on at team meetings.

1.3.12 After an incident, any lessons learned would be communicated to all of the Proposed Development staff. The appropriate action will be implemented elsewhere on the Proposed Development if necessary. All relevant method statements, sections of the CEMP, tool box talks etc. would be updated and all Proposed Development staff informed of the changes.

1.3.13 The Proposed Development staff would be briefed on the system for reporting incidents and near misses as a part of their Site Induction.

Community Liaison and Grievance Mechanism

1.3.14 During the construction period, a community liaison group would be set up to disseminate information and take feedback and the project website would be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the Site. This would be agreed with SIC as the Local Roads Authority.

1.3.15 A dedicated contact number for local residents to phone should they have any queries or complaints would be maintained and advertised on boards at the entry to the Site during the construction works. A log would be kept of all complaints, along with the actions taken to resolve them, for the duration of the works. Details of any complaints would be made available to the ECoW and any relevant consultees. The Applicant would endeavour to ensure any complaints received would be acknowledged promptly.

1.4 Typical Construction Stage Environmental Management Measures and Plans

1.4.1 This section provides sub-headings for typical detail to be provided in the CEMP.

Contractor Requirements

1.4.2 A Principal Contractor would be appointed, and they would ensure that all employees, sub-contractors, suppliers and other visitors to the site are made aware of the content of the CEMP and its applicability to them. Accordingly, environmental specific induction training would be prepared and presented to all categories of personnel working on and visiting the Site.

1.4.3 As a minimum, the following information would be provided to all inductees:

- identification of specific environmental risks associated with the work to be undertaken onsite by the inductee;
- summary of the main environmental aspects of concern at the site as identified in the CEMP; and
- Environmental Incident and Emergency Response Procedures (including specific Environmental Communication Plan requirements).

1.4.4 A conveniently sized copy of an Environmental Risk Map or equivalent would be provided to all inductees showing all of the sensitive areas, exclusion zones and designated washout areas. The map would be updated and reissued as required. Any updates to the map would be communicated to all inductees through a toolbox talk given by specialist environmental personnel. Regular toolbox talks would be provided during construction to provide ongoing reinforcement and awareness of environmental issues.

Temporary Lighting

1.4.5 Temporary lighting would be required at the temporary construction compounds for security purposes and to ensure that a safe working environment is provided to construction staff. In addition, temporary lighting could be required to ensure safe working conditions at infrastructure locations during construction.

1.4.6 All temporary lighting installations would be downwards pointing Passive Infra-Red (PIR) activated lighting and all lights would be switched off during daylight hours and outwith working hours.

Communication Plan

1.4.7 Specify proposed communication protocols and project team contacts.

Archaeological Management Plan

1.4.8 Specify requirements for mitigation and/or good practice measures agreed with SIC and in line with measures specified in the EIAR.

Ecological Management Plan

1.4.9 Provide an Ecological Management Plan (EMP), to include all measures required to protect ecology and ornithology (in line with the Species Protection Plan (SPP) and Breeding Birds Protection Plan (BBPP)) at the Site and ensure compliance with relevant nature conservation and wildlife protection legislation.

1.4.10 Specify requirement for an ECoW.

Management of Surface, Groundwater and Water Quality Monitoring Management Plan

1.4.11 Specify and provide design criteria for drainage management measures, to incorporate sustainable drainage systems (SuDS) to attenuate the volume and rate of runoff and maintain water quality.

1.4.12 Specify requirement for monitoring (including visual inspection and sampling) of all drainage measures (SuDS) employed during the construction phase to assess and manage the performance of the drainage system and ensure they are maintained appropriate and remain effective. The performance of the drainage measures will be monitored and recorded.

1.4.13 Specify requirement for monitoring of surface watercourses and groundwater to be undertaken during the construction phase.

1.4.14 The Principal Contractor shall obtain the appropriate EASR Permit from SEPA prior to the commencement of construction. The Principal Contractor would be responsible for implementing any requirements of the Site Licence and associated Pollution Prevention Plan (PPP), along with PPG/GPPs and GBRS relevant to the protection of water quality.

Dust Management Plan

1.4.15 Detail dust management controls and protocols for implementation (e.g. in the event of dry weather).

Waste Management Plan

1.4.16 Provide details of site waste management, identifying all waste streams and responsibilities of the sub-contractors.

Soil and Peat Management Plan

1.4.17 Provide an updated Peat Management Plan (PMP), to be produced post consent using data acquired through site investigation.

1.4.18 Specify measures to maintain soil structure and function during temporary storage and reinstatement work.

Peat Instability Risk Assessment Management Plan

1.4.19 Provide a geotechnical risk register and management plan to manage risks associated with construction in close proximity to areas identified as having peat instability risk.

Borrow Pit Management Plan

1.4.20 Specify the measures to manage potential environmental impacts, such as soil and groundwater contamination, during construction and operation of borrow pit.

Noise Management Plan

1.4.21 Specify hours of work and an outline of proposed restrictions, noise control measures required during construction work.

Construction Traffic Management Plan

1.4.22 Specify traffic management plan measures agreed with SIC.

1.5 Construction Method Statements

1.5.1 This section provides sub-headings for typical detail to be provided in the CEMP.

Construction Programme

1.5.2 The estimated construction period of the Proposed Development is approximately 24 months.

Working Hours

1.5.3 The working hours would be as follows:

- Monday to Saturday – 0700 to 1900 inclusive.
- Sunday – 0700 to 1600 inclusive.

1.5.4 No works, with the exception of completing concrete pours, turbine delivery, the completion of turbine erection or emergency work, will take place outside these hours. The requirement for out-of-hours work could arise, for example, the need to finish a concrete pour, from delivery and unloading of abnormal loads or health and safety requirements, or to ensure optimal use is made of fair weather windows for the erection of turbine blades and the erection and dismantling of cranes. Any other out-of-hours works will be subject to prior agreement with the SIC.

Temporary Construction Compounds, Lighting, Staging Area and Site Fencing

1.5.5 Specify layout in temporary construction compound.

Public Access Roads

1.5.6 Specify the improvements proposed along the Site access route and detail in a Construction Traffic Management Plan (CTMP) which will also set out any Agreements or Licences required with the relevant statutory authorities.

Site Entrance

1.5.7 Specify requirement for inspection of Site entrance roads and detail requirement/protocol for providing a road sweeper to remove any mud or debris transferred onto the roads from construction site activities if required.

Site Access Tracks

1.5.8 Specify construction details for Site access tracks, including installation of track drainage, and the locations and use of cut and floating track design, as appropriate.

1.5.9 Specify areas requiring sub-grade drainage measures to maintain groundwater connectivity (based on detailed site investigations at pre-construction phase).

Watercourse Crossings

1.5.10 Specify design of watercourse crossings in accordance with The Environmental Authorisations (Scotland) Regulations 2018[1] as amended (EASR).

1.5.11 Specifications will comply with:

- Flood Estimation Handbook[7] (Statistical Analysis) and ReFH2 - used where appropriate used to determine the design flow;
- CIRIA Culvert design and operation guide (C689) [8];
- Scottish Executive (2002) River Crossings and Migratory Fish: Design Guidance (where appropriate)[9]; and
- Other SEPA guidance where appropriate.

Construction Methodology

1.5.12 Specify watercourse crossing construction methodology, including detailed measures to prevent pollution.

Borrow Pits

1.5.13 Specify construction details for the borrow pit.

Crane Hardstandings

1.5.14 Specify construction design details for crane hardstandings and construction methods for their installation.

Wind Turbine Foundations

1.5.15 Specify the foundation design (based on site investigations) and construction methods proposed.

Wind Turbine and turbine Transformer Erection

1.5.16 Specify construction details for wind turbine and turbine transformer erection.

[7] UK Centre for Ecology and Hydrology: Flood Estimation Handbook. Online. Available at: Flood Estimation Handbook (FEH) | UK Centre for Ecology & Hydrology [Accessed: 19/02/2026]

[8] CIRIA (2010). Culvert design and operation guide (C689F). Available at: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C689F&Category=FREEPUBS [Accessed 19/02/2026]

[9] Scottish Executive (2002) River Crossings and Migratory Fish: Design Guidance.

Site Electrical Works

1.5.17 Specify construction details for site electrical works.

Cable Trench Design Philosophy

1.5.18 Specify route and design of onsite cables, including methods of installation, watercourse crossing and measures to ensure that cable trenches do not provide a potential pathway for dewatering peat forming habitats.

Substation, Control Building, Battery Energy Storage System (BESS) and Compound

1.5.19 Specify construction details for the substation control building, battery energy storage system and compound.

Grid Connection

1.5.20 Specify interface with transmission or distribution network operator for providing grid connection.

1.6 Decommissioning and Restoration Plan

1.6.1 The expected operational life of the Proposed Development would be 40 years from the date of final commissioning. Towards the end of this period a decision would be made as to whether to refurbish, replace or remove the wind turbines, or to seek approval to extend the operational period.

1.6.2 The CEMP would be updated on completion of construction work for handover from the Principal Contractor to the energy park owner/operator. The CEMP would provide details of all relevant 'as-built' plans/drawings and technical details which would inform the decommissioning process.

1.6.3 The CEMP would provide a schedule of bill of quantities to summarise the components and constituent materials which form the Proposed Development and the likely options or methodology envisaged for the decommissioning process.

1.6.4 If a decision was taken to decommission the Proposed Development, this would require the removal of all the wind turbine components, transformers, the substation and BESS and associated above ground infrastructure. In the event of decommissioning, a Decommissioning and Restoration Plan (DRP) would be prepared and would be submitted for approval by SIC, NatureScot and SEPA no less than 12 months prior to the planned commencement of the Proposed Development. The restoration elements of the DRP would be implemented within 18 months of final decommissioning of the Proposed Development, unless otherwise agreed with SIC.

1.6.5 The DRP would set out methods for the following:

- Access track and hardstand areas: new access tracks and areas of hardstanding constructed as part of the Proposed Development would be removed and reinstated, unless otherwise agreed with the landowner and/or SIC;
- Wind turbines: the decommissioning of the wind turbines would follow the reverse of the erection process involving similar lifting plant and equipment;
- Wind turbine foundations: it is widely accepted that there is no appreciable effect on the local environment for buried reinforced concrete structure left in situ due to the inert state of concrete;
- Cabling works: cables will remain in situ to avoid any effect to the local environment by their removal; and
- Substation compounds: would be decommissioned by disconnecting and dismantling all the above ground plant. Solid structures such as the building and equipment plinths would be demolished and the foundation would be removed to an agreed depth below ground level. Ducting and cabling that is within the agreed depth to be cleared would be removed. The fence surrounding the compound would be removed and the area covered with topsoil and reseeded, as required.