Document

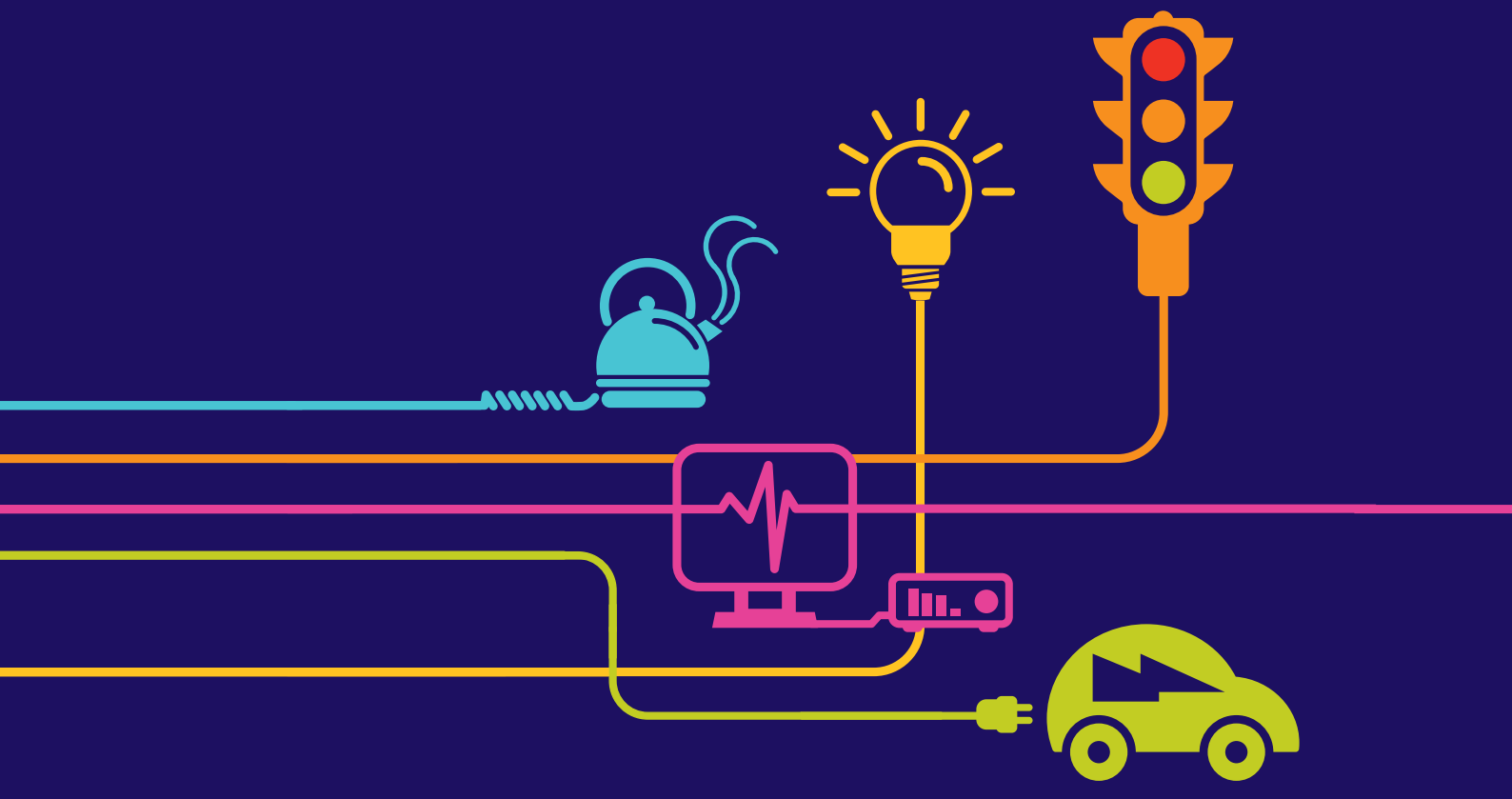
5.26.1C

nationalgrid

Environmental Statement Construction Environmental Management Plan

Hinkley Point C Connection Project

Regulation 5(2)(q) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



Application Reference EN020001

July 2015

nationalgrid

Hinkley Point C Connection Project

JULY 2015

VOLUME 5.26.1C – CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Document Control			
Document Properties			
Organisation		**National Grid**	
Author		**Amy Longmore, TEP**	
Approved By		**Heidi Curran, TEP**	
Title		**Construction Environmental Management Plan**	
Document Reference		**Volume 5.26.1C**	
Date	**Version**	**Status**	**Description/Changes**
09/05/14	A	Superseded	Final version for DCO submission
19/01/15	B	Superseded	Updated version for submission to PINS
08/05/15	C	Superseded	Updated version for submission to consultees
01/06/15	D	Superseded	Updated version for submission to PINS
13/07/15	E	Live	Updated version for submission to PINS

Table of Contents

INSETS (VOLUME 5.26.1C)

Inset 1.1: Likely Roles of Environmental Project Construction Team

ANNEXES (VOLUME 5.26.1C)

Annex A: Construction Compounds Schedule

Annex B: National Grid's Environmental Policy

Annex C: Western Power Distribution's Environmental Policy

APPENDICES

Appendix 1: Waste Management Plan **(VOLUME 5.26.2C)**

Appendix 2: Biodiversity Mitigation Strategy **(VOLUME 5.26.3C)**

Appendix 3: Archaeological Written Scheme of Investigation **(VOLUME 5.26.4C)**

Appendix 4: Construction Traffic Management Plan **(VOLUME 5.26.5C)**

Appendix 5: Public Rights of Way Management Plan **(VOLUME 5.26.6C)**

Appendix 6: Noise and Vibration Management Plan **(VOLUME 5.26.7B)**

EX1 EXECUTIVE SUMMARY

EX1.1 Purpose of the CEMP

EX1.1.1 This Construction Environmental Management Plan (CEMP) supports the application by National Grid Electricity Transmission plc (National Grid) to seek powers to construct, operate and maintain a new 400,000 volt (400kV) connection between Bridgwater, Somerset and Seabank Substation, north of Avonmouth, together with various associated development and other works ("the Proposed Development"). The Proposed Development is in the administrative boundaries of Somerset County, North Somerset, West Somerset, City of Bristol, Sedgemoor and South Gloucestershire in the southwest of England.

EX1.1.2 This document describes the mitigation measures that will be implemented by National Grid and its appointed contractors during each stage of the construction of the Proposed Development, and by Western Power Distribution (WPD) and its appointed contractors during each stage of the construction of Works Nos 4A to 4P (inclusive) as described in Schedule 1 of the Development Consent Order (DCO) and any associated development in connection with those works (the WPD works). In this document reference to WPD and its appointed contractors is a reference to the WPD works only, which form part of the Proposed Development.

EX1.1.3 The CEMP has been prepared in accordance with:

- the mitigation measures identified in the Environmental Statement (ES) (**Volumes 5.6.1 to 5.16.1**) and ES Sensitivity Test (**Volume 5.29**) to reduce effects on the environment from the construction of the Proposed Development;
- National Grid's and WPD's Environmental Management Systems (EMS) (National Grid's Environmental Policy (**Annex B**) and WPD's Environment Policy (**Annex C**)); and
- National Grid's and WPD's management control documents that accompany each EMS.

EX1.1.4 Revisions to this CEMP, including the management plans, were undertaken during the examination of the Application and pursuant to discussions with relevant stakeholders. The CEMP was certified by the Secretary of State in accordance with Article 45 (Certification of Plans etc.) of the DCO. National Grid, WPD and their contractors will implement the CEMP during the construction of the Proposed Development in accordance with **Schedule 3, Requirement 5** of the DCO.

Management Plans

EX1.1.5 Construction management plans (also certified by the Secretary of State in accordance with Article 45 of the DCO) have been prepared to accompany the CEMP; these will be implemented during the construction of the Proposed Development. The construction management plans detail further mitigation measures to reduce effects on the environment. These include:

- the Waste Management Plan (WMP) (**Volume 5.26.2C**);
- the Biodiversity Mitigation Strategy (BMS) (**Volume 5.26.3C**);
- the Archaeological Written Scheme of Investigation (WSI) (**Volume 5.26.4C**);
- the Construction Traffic Management Plan (CTMP) (**Volume 5.26.5C**);
- the Public Rights of Way Management Plan (PRoW) (**Volume 5.26.6C**); and

- the Noise and Vibration Management Plan (NVMP) (**Volume 5.26.7B**).

EX1.1.6 Detailed site-specific plans reflecting the overarching principles of the CEMP and its supporting documents will be prepared prior to each stage of construction and agreed with the relevant planning authority to set out in detail the management systems, procedures and approaches that will be implemented during construction to comply with the principles set out in the CEMP.

Objectives

EX1.1.7 The objectives of the CEMP are as follows:

- to provide a mechanism for ensuring the delivery of mitigation measures (other than those which will be secured through specific requirements of the DCO), to reduce environmental effects identified in the ES;
- to provide an outline of the content that will be supplied in additional plans (**Table 1.2**);
- to ensure compliance with legislation and identify where it will be necessary to obtain authorisation from relevant statutory bodies;
- to provide a framework for compliance auditing and inspection to ensure the agreed environmental aims are being met; and
- to ensure a prompt response to any non-compliance with legislative and DCO Requirements, including reporting, remediation and any additional mitigation measures required to prevent a recurrence.

Securing Implementation of the CEMP

EX1.1.8 The CEMP will be implemented by National Grid and WPD, and is secured through a Requirement of the DCO:

"Schedule 3, Requirement 5 – (1) All construction works for the authorised development must be carried out in accordance with the CEMP, unless otherwise agreed with the relevant planning authority and the relevant highway authority as may be appropriate to the relevant plan, scheme or strategy concerned."

EX1.1.9 National Grid and WPD will require their contractors to adopt and implement the CEMP during the construction of the Proposed Development. This will be secured through contractual agreements.

Inspection and Incident Control

EX1.1.10 Inspections will be undertaken to ensure the measures in the CEMP and management plans are being implemented. In the event that an aspect of the CEMP is not implemented, an incident control procedure will be followed. The incident control procedure will identify, report and investigate all environmental incidents, near misses and hazards associated with the construction of the Proposed Development.

EX1.2 Structure

EX1.2.1 This CEMP is split into two sections:

- Section 1 describes the general principles that will be adopted during construction in accordance with National Grid's and WPD's environmental policy and EMS. The general principles cover the following elements:
    - health and safety;
    - working hours;
    - site layout and appearance;
    - fencing and other means of enclosure;
    - lighting;
    - waste management;
    - security;
    - welfare;
    - pest control;
    - unexploded ordnance;
    - utility works;
    - clearance of the site on completion; and
    - consents and licences.

- Section 2 describes the mitigation measures that will be adopted during the construction of the Proposed Development in accordance with National Grid's and WPD's environmental policy and EMS, and in accordance with the ES (**Volumes 5.6.1 to 5.16.1**). The mitigation measures will be implemented to reduce risk on the following environmental topics:
    - landscape and views;
    - biodiversity and nature conservation;
    - geology, soils and land affected by contamination;
    - the water environment;
    - the historic environment;
    - traffic and transport;
    - air quality;
    - noise and vibration;
    - socio-economics and land-use; and
    - public rights of way.

1 INTRODUCTION

1.1 The Proposed Development

1.1.1 The Proposed Development includes the following principal elements which are described in detail in the Environmental Statement (ES) (**Volume 5.3.1**):

- construction of a 57km 400,00 volt (400kV) electricity transmission connection between Bridgwater in Somerset and Seabank, near Avonmouth, comprising:
  - installation of a 400kV overhead line; and
  - installation of 400kV underground cables.
- modifications to existing overhead lines at Hinkley Point, Somerset;
- construction of three 400kV cable sealing end (CSE) compounds along the route of the connection;
- construction of a 400/132kV substation at Sandford, North Somerset;
- extension of the existing 400kV substation at Seabank;
- the removal of existing 132,00 (132kV) overhead lines and the construction of replacement 132kV overhead lines and 132kV underground cables;
- extensions/modifications to existing 132kV substations at Churchill, Portishead, Avonmouth and Seabank; and
- associated works, for example, temporary access roads, highway works, temporary construction compounds, scaffolding, work sites and ancillary works.

1.2 The Purpose of the Construction Environmental Management Plan

1.2.1 This Construction Environmental Management Plan (CEMP) supports the application by National Grid Electricity Transmission plc (National Grid) to seek powers to construct, operate and maintain a new 400,000 volt (400kV) connection between Bridgwater, Somerset and Seabank Substation, north of Avonmouth, together with various associated development and other works ("the Proposed Development"). The Proposed Development is in the administrative boundaries of Somerset County, North Somerset, West Somerset, City of Bristol, Sedgemoor and South Gloucestershire in the southwest of England.

1.2.2 This CEMP has been prepared by National Grid and Western Power Distribution (WPD) and presents the approach and application of environmental management and mitigation for the construction of the Proposed Development. The CEMP aims to ensure that adverse effects from the construction phase of the Proposed Development, on the environment and the local communities, are minimised. It does not describe mitigation measures relating to the operation and decommissioning of the Proposed Development; these are provided in the mitigation sections of the ES Chapters (**Volumes 5.6.1 to 5.16.1**) and collated in the Overarching Mitigation Annex at **Volume 5.32B**.

1.2.3 The CEMP has been prepared in accordance with the construction mitigation measures identified in the ES Chapters (**Volumes 5.6.1 to 5.16.1**) and in accordance with National Grid's Environmental Management System (EMS) (**Annex B**) and WPD's EMS (**Annex C**).

1.2.4 The Overarching Mitigation Annex, at **Volume 5.32B**, provides a compendium of mitigation and enhancement measures across all phases of the Proposed Development, including all measures (or a summary where appropriate) from the CEMP and its appendices, operational mitigation including site-specific planting schemes, and the Off-site Planting and Enhancement Scheme (**Volume 5.25B**).

1.3 The Development Consent Order

1.3.1 The CEMP will be implemented by National Grid and WPD (as appropriate) secured through the following Requirement of the Development Consent Order (DCO).

Schedule 3, 5 – (1) All construction works for the authorised development must be carried out in accordance with the CEMP, unless otherwise agreed with the relevant planning authority and the relevant highway authority as may be appropriate to the relevant plan, scheme or strategy concerned.

Schedule 3, 5 – (2) The CEMP, which specifies measures to be used to minimise the impacts of construction works, incorporates the following plans, scheme and strategy—

(a) Waste Management Plan;

(b) Biodiversity Mitigation Strategy;

(c) Archaeological Written Scheme of Investigation;

(d) Construction Traffic Management Plan;

(e) Public Rights of Way Management Plan; and

(f) Noise and Vibration Management Plan.

Schedule 3, 5 – (3) Any works carried out pursuant to the plans, scheme and strategy referred to in sub-paragraph (2) must be carried out in accordance with the approved plan, scheme or strategy unless otherwise agreed with the relevant planning authority.

Schedule 3, 5 – (4) The plans, scheme and strategy referred to in sub-paragraph (2) must be implemented as approved unless otherwise agreed with the relevant planning authority and the relevant highway authority as may be appropriate to the relevant plan, scheme or strategy concerned.

1.3.2 National Grid and WPD will require their contractors to adopt and implement the CEMP during the construction of the Proposed Development. This will be secured through contractual agreements.

1.3.3 Revisions to this CEMP, including the management plans (detailed in **Table 1.1**), were undertaken during the examination of the Application and pursuant to discussions with relevant statutory consultees. The CEMP was certified by the Secretary of State in accordance with Article 45 (Certification of Plans etc.) of the DCO. National Grid, WPD and their contractors will implement the CEMP during the construction of the Proposed Development in accordance with **Schedule 3, Requirement 5** of the DCO.

1.4 Objectives

1.4.1 The objectives of the CEMP are to:

- provide a mechanism for ensuring the delivery of mitigation measures to reduce environmental effects identified in the ES;
- provide an outline of the content that will be supplied in the additional plans (**Table 1.2**);
- ensure compliance with legislation and identifying where it will be necessary to obtain authorisation from relevant statutory bodies;
- provide a framework for compliance auditing and inspection to ensure the agreed environmental aims are being met; and
- ensure a prompt response to any non-compliance with legislative and DCO Requirements, including reporting, remediation and any additional mitigation measures required to prevent a recurrence.

1.5 Supporting Plans

1.5.1 The CEMP also incorporates the plans and strategies shown in **Table 1.1**.

Table 1.1 Management Plans

Plan/Strategy	Description	Appendix/Volume
Waste Management Plan (WMP)	A strategy and action plan for the management of waste which is likely to arise during the construction phase of the Proposed Development.	Volume 5.26.2C
Biodiversity Mitigation Strategy (BMS)	Describes measures to avoid, reduce, mitigate and compensate for likely adverse effects on ecological receptors.	Volume 5.26.3C
Archaeological Written Scheme of Investigation (WSI)	Sets out the steps that need to be taken to mitigate the predicted effects on archaeology, geo-archaeology and historic landscape heritage assets.	Volume 5.26.4C
Construction Traffic Management Plan (CTMP)	Details the strategy and mitigation measures to be used to limit the impact on existing users of the public highway network.	Volume 5.26.5C
Public Rights of Way (PRoW) Management Plan	Describes where the PRoW will be affected and how the PRoW will be managed, to ensure they are safe to use and the disruption to the users of the PRoW is minimised.	Volume 5.26.6C
Noise and Vibration Management Plan	Sets out the principles and procedures for the management of noise and vibration during the construction of the Proposed Development.	Volume 5.26.7B

1.5.2 **Table 1.2** lists the detailed site-specific plans the appointed contractors will develop for each stage of the Proposed Development to set out in detail the management systems, procedures and approaches that will be implemented during construction to comply with the principles set out in the CEMP.

Table 1.2 Plans to be prepared by the Appointed Contractors

Management Plan	**Description**
Project Environmental Management Plan (PEMP)	Details the environmental mitigation measures that will be implemented during each stage of the construction works and will be in accordance with the CEMP.
Contractor Environmental Management System	Details the framework for managing the environment.
Pollution Incident Control Plan (PICP)	Identifies how the risk of pollution due to construction works, materials and extreme weather events will be controlled and identifies the remedial actions in the event of an incident (detailed further at section 1.13).
Construction Phase Safety, Health and Environmental (SHE) Plan	Details relevant safety, health and environmental information relating to all construction activities (detailed further at section 2.2).
Lighting Scheme	Identifies the detail of the location, type and use of lighting at the construction site (detailed further at section 2.6).
Site Waste Management Plan (SWMP)	Sets out details developed from the WMP to identify site-specific measures for the collection, segregation, treatment and disposal of waste (detailed further at section 2.7).
Emergency Response Plan for Unexploded Ordnance	Describes the procedure to be followed in the discovery of unexploded ordnance (detailed further at section 2.11).
Soil Management Plan (SMP)	Identifies the nature of the soil, areas of potential difficulty in gaining access, working excavating or soil handling arising from the nature of the soil. Describes how works should be undertaken to minimise effects on the nature and quality of the soil (detailed further at section 3.3).
Drainage Management Plan (DMP)	In accordance with **Schedule 3, Requirements 16 and 17** of the DCO; identifies all known risks to the water environment and identifies appropriate measures to control flood risk and prevent pollution during construction, with a series of DMPs developed as necessary to take account of specific site conditions along the route (detailed further at section 3.4).

Management Plan	Description
Emergency Response Plan for Flood Events	Details the emergency procedures in the event of a flood (outlined at section 3.4).
Archaeological Method Statements	Outline the techniques and approaches that will be used in providing the field surveys proposed in the WSI.

1.5.3 In accordance with **Schedule 3, Requirement 6** of the DCO, no stage of the authorised development will commence until, for that stage, the following plans and scheme to minimise the impacts of construction works, have been submitted to, and approved by, the relevant planning authority or other relevant statutory body:

- Soil Management Plan (SMP);
- Drainage Management Plan (DMP);
- Pollution Incident Control Plan (PICP);
- Project Environmental Management Plan (PEMP);
- Lighting Scheme;
- Emergency Response Plan for Flood Events;
- Site Waste Management Plan (SWMP);
- Archaeological Method Statements; and
- Tree and Hedgerow Protection Strategy

1.6 Conformance with Corporate and Project Environmental Management System

1.6.1 National Grid and WPD are committed to safeguarding the environment for future generations by taking a responsible and sustainable approach in all that they do.

1.6.2 In accordance with this proactive approach to sustainable design and construction National Grid, WPD and the appointed contractors will to seek to maximise resource efficiency through reducing the amount of waste generated, minimising water consumption and making the most efficient use of energy.

1.6.3 The carbon footprint of the Proposed Development will be minimised during construction by avoiding CO_2 emissions where possible through, for example, keeping construction vehicle movements to the minimum necessary.

1.6.4 National Grid and WPD each maintain an EMS to provide a framework within which to manage and reduce their effects on the environment. Each EMS is accredited to ISO14001:2004. A summary of National Grid's environmental policy is provided at **Annex B** to this Volume and a summary of WPD's environmental policy is provided at **Annex C** to this Volume. This CEMP complies with National Grid's and WPD's environmental policies.

1.6.5 Each EMS sets out the overall processes for:

- environmental responsibilities;
- identifying environmental aspects;
- setting and achieving environmental objective and targets;
- controlling environmental impact;

- meeting the conditions of environmental consents and permits; and
- preparing and responding to environmental emergencies and incidents.

1.6.6 The contractors will prepare their own project-based EMS in accordance with National Grid's and WPD's EMS prior to construction commencing. An EMS will be prepared by the contractors for each element of the Proposed Development, including overhead line works, underground cables works and substation works. The contractors' EMS will detail their framework for managing the environment. National Grid and WPD will approve the contractors' EMS prior to construction.

1.6.7 The contractors' EMS will address:

- the environmental aspects identified in the ES (**Volumes 5.6.1 to 5.16.1**) and CEMP;
- compliance with environmental consents and permits;
- overall compliance with environmental legislation, approved codes of practice and industry best practice as set out in each topic detailed in this CEMP;
- an action plan to deliver the CEMP, including roles and responsibilities;
- monitoring and review arrangements;
- emergency procedures that are defined and adopted; and
- appropriate training and information for personnel.

1.7 Conformance with the Environmental Statement

1.7.1 An Environmental Impact Assessment (EIA) has been undertaken for the Proposed Development. An ES has been prepared in accordance with the Infrastructure Planning (EIA) Regulations 2009 (the 2009 Regulations). The ES is provided at **Volumes 5.1.1 to 5.19** and the ES Sensitivity Test (**Volume 5.29**). In accordance with the requirements of the 2009 Regulations, the ES includes assessments of the potential effects on the environment that are likely to be caused during the construction, operation and decommissioning phases of the Proposed Development. The ES also describes the mitigation measures to reduce the significance of the adverse effects on the environment.

1.7.2 This CEMP has been prepared in accordance with the mitigation measures identified in the ES to reduce the adverse effects of the Proposed Development on the environment during construction.

1.7.3 National Grid, WPD and the contractors will implement the mitigation measures identified in the ES and in the CEMP to reduce adverse effects of the construction of the Proposed Development on the environment.

1.7.4 The preliminary construction programme which forms the basis of the ES assessment is detailed at **Table 1.3** below (see also **Volume 5.29.1.1**).

Table 1.3 Preliminary Construction Programme

Proposed Development Component	Start Date	Finish Date
400kV Overhead Line 400kV Route (South)	Q2 2018	Q2 2020
400kV Overhead Line 400kv Route (North)	Q3 2018	Q3 2021
400kV Overhead Line 400kV Route (Huntspill to Bridgwater Tee)	Q3 2019	Q2 2020
400kV Cable Mendip Hills Route - works between A38 Bristol Road to Tower head Road (including South of Mendip Hills CSE Compound, A38 Bristol Road (UGC) Compound and haul Road	Q1 2016	Q2 2020
400kV Cable Mendip Hills Route – works between Towerhead Road and Sandford Substation	Q1 2018	Q2 2020
400kV Cable – works between Towerhead Road and Sandford Substation (haul road and compound only)	Q1 2017	Q3 2021
Bridgwater Tee 400kV Cable Route	Q3 2019	Q3 2020
AT Route Underground and Overhead Line	Q4 2019	Q3 2020
W Route	Q2 2017	Q2 2019
BW Route Avonmouth Option A	Q4 2018	Q2 2019
BW Route Portishead Option B	Q4 2018	Q4 2019
G Route	Q3 2019	Q3 2020
Seabank Line Entries BW Route	December 2015	Q2 2016
Seabank Line Entries G Route	Q1 2016	Q3 2016
Seabank Line Entries DA Route	Q1 2018	Q3 2018
N Route Overhead Line (including disconnection and removal)	Q3 2019	Q2 2020
Hinkley Line Entries	Q3 2018	Q3 2022
Y Route Churchill	Q1 2018	Q4 2018
W Route Churchill	Q3 2018	Q3 2018
Sandford 400/132kV Substation	Q1 2018	Q3 2020
Seabank 400/132kV Substation	Q4 2019	Q4 2021
Churchill 132/33kV WPD Substation	December 2015	Q4 2018
Portishead 132/33kV WPD Substation	Q3 2018	Q2 2019
Avonmouth132/33kV WPD Substation	Q3 2019	Q2 2020
Removal of Southern Half F Route	Q3 2019	Q4 2019
Removal of Northern Half F Route	Q2 2020	Q2 2021
Removal of 132kV G Route	Q3 2019	Q3 2020

1.8 Compliance with Legislation, Standards and Guidance

1.8.1 There is a broad range of legislation covering the different aspects of environmental protection. These are supported by additional statutory guidance; 'standards', such as British Standards (BS) or International Standards (ISO); and other 'best practice' guidance, including industry codes of practice. Where applicable, references to specific legislation, standards and guidance are included within each subsequent section of this CEMP.

1.8.2 This aspect of the CEMP will be kept under review and updated as required as a result of new or amended legislation, standards and guidance by National Grid and WPD and issued to their contractors.

1.9 Involvement of Local Authorities and Other Statutory Bodies

1.9.1 National Grid and WPD have engaged with stakeholders, including local authorities and other statutory and non-statutory bodies, throughout the design evolution of the Proposed Development, as is described in the Consultation Report (**Volume 6.1**).

1.9.2 Specifically, stakeholders have been invited to provide comment on the Environmental Impact Assessment of the Proposed Development, at preliminary stage (Statutory Stage 4) and on the first drafts of the ES. Comments were received on all aspects of the EIA including on proposed mitigation. These comments have been taken into account in the design of the Proposed Development, the ES and this CEMP.

1.9.3 During the examination of the Application, the local authorities and other statutory bodies will have the opportunity to provide further input and advice to National Grid and WPD on the adequacy of the measures in this CEMP and accompanying management plans. This includes the adequacy of the process and controls to be implemented. Any advice provided during the examination process has been considered and where appropriate revisions to the CEMP made by National Grid and WPD.

1.9.4 Additional consents will be sought where required, such as permits from the Environment Agency (EA) and land drainage consents from the Internal Drainage Boards (IDBs). Consultation will be undertaken with the appropriate bodies.

1.10 Community Engagement and Public Information

1.10.1 A community relations agency will be appointed to provide dedicated community relations and external communication support. The community relations agency will work with the internal established communications teams at National Grid and WPD.

1.10.2 A 24 hour free telephone project helpline and project website will be established and be managed by the community relations team. The project helpline and website information will be visible on boards placed around the parameter of the construction site in appropriate locations where they would be visible to the public. The telephone number and project website details will be provided to the local authorities.

1.10.3 The community relations team will ensure the details of any complaints are recorded and all complaints are appropriately managed. Complaints will be investigated and appropriate action will be taken. The investigation procedure is detailed at section 1.13.

1.10.4 In addition to the project telephone helpline and the project website, complaints from an external party may also be received via a number of other sources, for example, via written correspondence or incidental contact with construction workers.

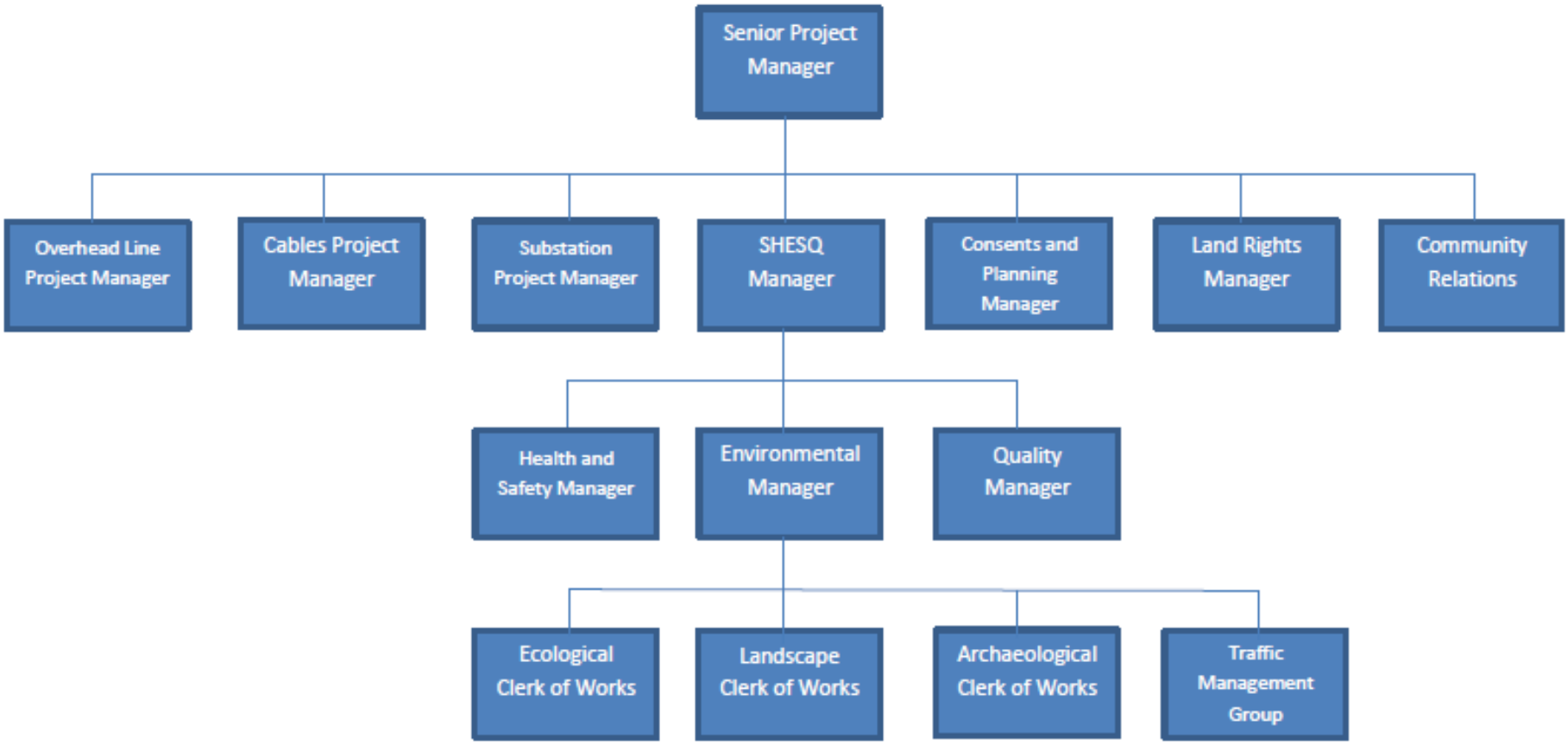
1.10.5 Where a person from a community local to the works makes a complaint, it will be passed initially to the community relations team. The community relations team will liaise with the other members of the project team to investigate the complaint. Appropriate action will be taken by the project construction team.

1.10.6 **Schedule 3, Requirement 31** sets out a need for a system for the provision of information to local residents and occupiers about the works and for the handling of complaints to be submitted to and approved by the relevant planning authority prior to the commencement of works.

1.11 Roles and Responsibilities

1.11.1 Establishing roles and responsibilities on site is important to ensure the successful construction of the Proposed Development, including the implementation of the CEMP. **Inset 1.1** describes the roles of the likely environmental project construction team.

Inset 1.1: Likely Roles of Environmental Project Construction Team



Responsibilities

1.11.2 The responsibilities of the personnel who will be responsible for implementing, monitoring, responding to, and updating the CEMP are described at **Table 1.4**.

Table 1.4 Responsibilities of the Likely Environmental Project Construction Team

Role	Responsibilities
Senior Project Manager	overall responsibility for ensuring conformance with the CEMP; and incident investigation.
Safety, Health, Environment, Security and Quality (SHESQ) Manager	reviewing risk assessments and method statements (RAMS); manager of the Safety, Health and Environment (SHE) Plan; reviewing, updating and issuing the CEMP; incident investigation; liaison with the emergency services; site inspection; reviewing applications for environmental consents and permits; and sensible monitoring.
Environmental Project Manager	site inspection; preparing and submitting applications for environmental consents and permits; liaison with third parties and licensing authorities; organising environmental surveys; sensible monitoring; overseeing and monitoring the PRoW Management Plan (see also **Volume 5.26.6C** and section 3.10 of this CEMP); and discharging consent conditions.
Ecological Clerk of Works	overseeing and monitoring the implementation of the BMS (see also **Volume 5.26.3C** and section 3.2 of this CEMP).
Landscape Clerk of Works	overseeing and monitoring all landscape works (see also section 3.1 of this CEMP).
Archaeological Clerk of Works	overseeing and monitoring the implementation of the WSI and archaeological method statements (see also **Volume 5.26.4C** and section 3.5 of this CEMP).

Role	Responsibilities
Traffic Management Group	overseeing and monitoring the implementation of the CTMP (see also **Volume 5.26.5C**) and section 3.6 of this CEMP).

Contractors

1.11.3 Appropriate contractors will be appointed for the project by National Grid and WPD (as appropriate). The contractors will be responsible for implementing the CEMP through contractual agreements with National Grid and WPD.

1.11.4 Prior to each stage of construction commencing, the contractors will prepare the management plans described at **Table 1.2** of this CEMP.

1.11.5 The contractors will prepare and update the site Safety Health and Environment (SHE) Plan, which details relevant safety, health and environmental information relating to all land within the construction site.

1.11.6 The contractors will prepare a PEMP, which will detail all of the environmental mitigation measures for each stage of the works that will be implemented. The PEMP will be in accordance with the CEMP.

1.11.7 The plans will be made available to any person working on the Proposed Development.

1.11.8 Environmental issues that arise during the construction of the Proposed Development will be reviewed at the inaugural and subsequent regular meetings held by the contractors. Daily toolbox talks will be held by the contractors to inform the construction staff of any environmental issues and any changes to the CEMP, PEMP and/or the SHE Plan.

1.11.9 National Grid, WPD and the contractors will ensure that all staff, including sub-contractors are trained and competent in the management of environmental impacts to a level that is appropriate to their role.

1.12 Inspections

1.12.1 The contractors will undertake daily inspections, which will include monitoring conformance with the CEMP. Daily assessment forms will be completed during the daily checks. Checks on equipment will be undertaken to reduce the risk of incidents occurring (for example oil leaks). As a minimum the following equipment will be inspected:

a) fencing;

b) waste storage facilities;

c) oil separators;

d) chemical storage facilities;

e) bund integrity;

f) foul water storage facilities;

g) silt traps;

h) drainage ditches and watercourses;

i) storage vessels (including pumps, gauges, pipework and hoses);

j) secondary containment (for example, secondary skins for oil tanks);

k) spill response materials; and

l) equipment with potential to leak oils and other liquids, for example, compressors and transformers.

1.12.2 Weekly inspections will be undertaken by National Grid, WPD and the contractors to ensure the daily checks are being undertaken correctly.

1.12.3 The daily and weekly inspections will also include, in addition to the list at paragraph 1.13.2:

a) reviewing the daily risk assessment forms;

b) ensuring that faults and defects are identified and rectified; and

c) providing data for performance monitoring.

1.12.4 Environmental performance data will be collected and collated into the SHE Plan.

1.12.5 Immediate action including, if necessary 'stopping a job', will be taken should any incidents or non-conformance with the CEMP be found during inspection.

1.12.6 National Grid's, WPD's and the contractors' monitoring reports will be made available to statutory and non-statutory bodies on request.

1.13 Incident Procedure

Pollution Incident Control Plan (PICP)

1.13.1 Contractors will develop and implement a PICP which will detail their response in the event of any incident on site.

1.13.2 The following measures and information will be included and detailed further in the PICP to manage any incidents and limit adverse effects on the receiving environment:

a) describe the procedure to be followed in the event of an incident (in accordance with the 'Incident Response' procedure below);

b) describe the procedure for the notification of appropriate emergency services, authorities and personnel on the construction site;

c) describe the procedure for the notification of relevant statutory bodies, environmental regulatory bodies, local authorities and local water and sewer providers;

d) provide maps showing the locations of local emergency services facilities such as police stations, fire authorities, medical facilities, other relevant authorities, such as the EA and also the address and contact details for each service and authority;

e) provide contact details for the persons responsible on the construction site for pollution incident response;

f) provide contact details of a competent spill response company which can be contacted at short notice for an immediate response;

g) ensure that site drainage plans and flood risk management plans are available on site and are kept up-to date; and

h) ensure staff competence and awareness in implementing plans and using pollution response kit.

Incident Response

1.13.3 All incidents associated with the construction of the Proposed Development, including environmental incidents and non-conformance with the CEMP, will be reported and investigated using the PICP (unless stated differently in other Management Plans, for example the BMS, CTMP, WSI and WMP).

1.13.4 The following procedure will be followed in the event of an incident and will be detailed further in the PICP:

a) works will stop;

b) the Environmental Manager and SHESQ Manager will be contacted;

c) the size of the incident will be assessed;
   i) if the incident is controllable by staff on Site, remedial action will be taken immediately in accordance with the Pollution Incident Control Plan;
   ii) if the incident cannot be controlled by the staff on Site, emergency assistance will be sought;

d) the appropriate enforcing authority will be contacted and informed, including:
   i) the EA for incidents affecting rivers, groundwater and major emissions to atmosphere;
   ii) the local sewerage undertaker for incidents affecting sewers;
   iii) the Local Authority Environmental Health Department for incidents that could affect the public;
   iv) the Food Standards Agency for incidents that have the potential to affect food through deposition on crops or land used for grazing livestock;

e) the Senior Project Manager and SHESQ Manager will instigate an investigation into the occurrence of the incident;

f) the findings will be sent to the appropriate enforcing authority where necessary; and

g) an action plan will be prepared to determine why the incident occurred and whether any modifications to working practices are required to prevent a recurrence. If necessary, the CEMP and SHE Plan will be updated (and any other plans as appropriate) and all workers will be notified.

1.14 Structure of the CEMP

1.14.1 The remainder of this CEMP is split into two sections:

- Section 1 (Chapter 2): describes the general principles that will be adopted on the construction site in accordance with National Grid's environmental policy (**Annex B**) and WPD's environmental policy (**Annex C**). The general principles cover the following elements:
    - health and safety;
    - construction hours;
    - site layout and appearance;
    - fencing and other means of enclosure;
    - lighting;
    - waste management;
    - security;
    - welfare;
    - pest control;
    - unexploded ordnance;
    - utility works;
    - clearance of the site on completion; and
    - consents and licences.

- Section 2 (Chapter 3) describes the mitigation measures that will be adopted during the construction of the Proposed Development in accordance with National Grid's environmental policy and WPD's environmental policy), and in accordance with the ES (**Volumes 5.6.1 to 5.16.1**). The mitigation measures will be implemented to reduce risk on the following environmental aspects:
    - landscape and views;
    - biodiversity and nature conservation;
    - geology, soils and land affected by contamination;
    - the water environment;
    - the historic environment;
    - traffic and transport;
    - air quality;
    - noise and vibration;
    - socio-economics and land-use; and
    - public rights of way.

2 GENERAL SITE OPERATIONS

2.1 Objective

2.1.1 To construct the Proposed Development having regard to the safety and security of the public and construction staff and to mitigate the impact of general site operations.

2.2 Health and Safety

2.2.1 National Grid and WPD are committed to ensuring the health and safety of persons working on projects and the protection of the environment is maintained in accordance with the Construction (Design and Management) Regulations 2015 (CDM) (Ref 1.1) and the principles and philosophy behind them.

2.2.2 In accordance with health and safety legislation (Ref 1.2), the contractors will prepare a Construction Phase SHE Plan prior to construction works commencing. A Construction Phase Health and Safety Plan will be prepared by the contractors for each element of the Proposed Development, including overhead line works, underground cables works and substation works. The Plan will ensure that adequate arrangements and welfare facilities are in place to cover:

a) the safety of construction staff;

b) the safety of all other people working at or visiting the construction site;

c) the protection of the public in the vicinity of the construction site;

d) compliance with the Construction (Design and Management) Regulations 2015 and associated HSE guidance documents (Ref 1.3);

e) emergency procedures being defined and adopted; and

f) appropriate training and information being provided to personnel.

2.2.3 The contractors' Construction Phase SHE Plan will be reviewed and approved by National Grid and WPD prior to construction commencing. As described at section 1.11, the SHE Plan will be managed and implemented by the SHESQ Manager.

2.2.4 All staff, site visitors and delivery drivers will receive a relevant project induction by the contractors to ensure they are aware of site hazards and health, safety and environmental management requirements. Site staff will be briefed daily by the contractors prior to work commencing. Site-specific risk assessments will be carried out to ensure the risk strategy of the frequently changing workplace remains relevant. The contractors will be required to carry out audits and inspections throughout the Proposed Development in accordance with section 1.12 of this CEMP.

2.2.5 Emergency contact for the public will be through the enquiries and complaints procedure as described in section 1.10 of this CEMP.

2.2.6 Where works have the potential to affect identified traveller communities, National Grid or WPD, as appropriate, will nominate a single point of contact for any liaison required (in discussion with the relevant local traveller liaison officer).

2.3 Construction Hours

2.3.1 Construction work will take place in accordance with the 'Construction Hours' set out in **Schedule 3, Requirement 7** of the DCO.

2.4 Construction Site Layout and Appearance

2.4.1 The layout, appearance and operation of the construction site, site offices and compounds will be detailed prior to construction commencing and will comply with the commitments in this CEMP. In particular, the layout, appearance and operation of the construction site, site offices and compounds will be managed as follows:

a) all working areas will be kept in a clean and tidy condition;

b) smoking areas at site offices, compounds and construction sites will be equipped with containers for smoking waste and will not be located at the boundary of working areas or adjacent to neighbouring land;

c) all necessary measures will be taken to minimise the risk of fire;

d) workers will maintain a reasonable and appropriate standard of dress at all times and will not use foul language or display lewd or derogatory behaviour;

e) appropriate measures, such as use of enclosed containers, will be employed to store waste susceptible to spreading by wind or liable to cause litter (see section 2.7 of this CEMP and the WMP (**Volume 5.26.2C**);

f) fencing and other means of enclosure will be inspected daily, repaired and repainted as necessary (see section 2.5 of this CEMP);

g) adequate welfare facilities will be provided for all construction staff. All toilets will be serviced and kept clean (see section 2.9 of this CEMP);

h) good personal hygiene will be promoted by the contractors for the workforce, particularly when using site canteens or mess facilities;

i) site accesses, accesses to site compounds and roads in the vicinity of site access points will be maintained and kept clean as required (see section 3.6 of this CEMP);

j) commitments relating to noise and vibration (see section 3.8 of this CEMP);

k) commitments relating to dust, odours and air pollution (see section 3.7 of this CEMP);

l) commitments relating to the handling, storage and disposal of materials (see sections 2.7 and 3.3 of this CEMP); and

m) appropriate management and disposal of foul water and sewage (see sections 3.3 and 3.4 of this CEMP).

2.5 Fencing and Other Means of Enclosure

2.5.1 Working areas will be appropriately fenced from members of the public and to prevent animals from straying onto a working area. Fencing and other means of enclosure at the construction compounds will comply with section 3.1 (Landscape and Views) of this CEMP and **Schedule 3, Requirement 16** of the DCO.

2.5.2 Enhanced measures to mitigate visual effects of the construction works will be considered at other sites as considered appropriate and will comply with section 3.1 (Landscape and Views) of this CEMP. Details would be submitted for approval in accordance with relevant requirements set out in **Schedule 3** of the DCO (e.g. fencing and other means of enclosure (**Schedule 3, Requirement 16**), accumulations and deposits (**Schedule 3, Requirement 21**).

2.5.3 Fencing and other means of enclosure in areas at risk of flooding will be permeable to floodwater, unless otherwise agreed with the EA, to ensure that the fluvial floodplain and areas liable to other sources of flooding continue to function effectively for storage and conveyance of floodwater.

2.5.4 Fencing and other means of enclosure will be inspected daily, repaired and repainted as necessary. Any temporary fencing will be removed as soon as reasonably practicable after completion of the works.

2.5.5 No stage of the Proposed Development may commence until written details of all proposed permanent and temporary fences, walls or other means of enclosure for that stage have been approved by the relevant planning authority.

2.6 Lighting

2.6.1 The control of artificial lighting will be in accordance with **Schedule 3, Requirement 8** of the DCO. No stage of the authorised development shall commence until written details of any temporary or permanent external lighting to be installed during that stage, including measures to prevent light spillage, have been submitted to and approved by the relevant planning authority.

2.6.2 The written details must incorporate the mitigation measures in relation to lighting set out in the BMS (**Volume 5.26.3C**) to reduce potential effects on habitats and species.

2.6.3 Winter working may require task-specific lighting due to the short day lengths when lighting will be required at the beginning and end of the day. Lighting will be used only when required during core working hours, unless otherwise stated and will comprise lighting of work areas and access and egress with low level directional lighting.

2.6.4 Construction compounds will not be lit at night outside core working hours except for welfare and site security cabins that will include low level lighting. Motion sensor lighting will be used in areas of high security risk.

2.6.5 Cable jointing will require 24/7 lighting inside the covered structures that will surround the cable jointing bays. Motion sensor lighting will be required outside the covered structures for security and access and egress.

2.6.6 Other works required to be undertaken outside of the normal working hours may also require lighting.

2.6.7 The following measures will be implemented:

a) lights installed will be of the minimum brightness and/or power rating capable of performing the desired function;

b) light fittings will be used that reduce the amount of light emitted above the horizontal;

c) light fittings will be positioned correctly and directed downwards;

d) the direction of lights will seek to avoid spillage onto neighbouring properties;

e) Passive Infra-Red (PIR) controlled lights will be considered for use where appropriate as these may be more acceptable to neighbours than those which are controlled by a time switch or are on all the time; and

f) unnecessary lights will be switched off.

2.7 Waste Management

2.7.1 National Grid, WPD and the contractors are responsible for managing waste arising from all activities in order to prevent pollution and to meet or exceed legal requirements (Ref 1.4, Ref 1.5, Ref 1.6 and Ref 1.7).

2.7.2 National Grid and WPD have prepared a WMP (**Volume 5.26.2C**). The contractors will prepare and submit to National Grid and WPD SWMPs, for each of the principle project components (overhead lines, underground cables and substations/CSE compounds), to include their associated works, which will be in accordance with the following measures, as provided in the WMP:

a) the consumption of raw materials and waste shall be minimised, through sound design and good practice in sustainable procurement;
b) where waste is generated, opportunities for reusing or recycling the waste will be considered prior to disposal via landfill;
c) waste materials will be stored securely on site in order to prevent their escape and protect them against vandalism, vermin or outside interference;
d) hazardous waste (e.g. paints, solvents, sealants) will be segregated on-site to avoid contaminating other material and waste streams;
e) storage of waste on site will either be:
   i) within the scope of, and comply with, the requirements of one or more of the activities specified as exempt form Waste Management Licensing; or
   ii) carried out under an environmental permit issue by the EA;
f) waste management activities on sites operating under an environmental permit will be managed by a nominated technically competent manager;
g) all waste disposal contractors carrying waste will be authorised to do so and all sites that receive the waste will be authorised to do so;
h) disposal of all waste will be accompanied by the relevant statutory transfer documentation that adequately describes the waste;
i) quantities of waste generated will be recorded and monitored. Records will be kept for a minimum of three years;
j) all employees and contractors will have a Duty of Care (Ref 1.4) when controlling the carriage and disposal of waste to ensure it is handled in a responsible manner; and

k) all staff and contractors working on the Proposed Development will be informed of which waste should be deposited where.

2.7.3 No stage of the authorised development will commence until, for that stage, the SWMPs, have been submitted to, and approved by, the relevant planning authority or other relevant statutory body.

2.8 Security

2.8.1 Construction sites will be controlled in accordance with the statutory duty (Ref 1.2) to prevent unauthorised access to the site. Site-specific assessments of the security and trespass risk will be undertaken at each site and appropriate control measures implemented. The control measures are likely to include:

a) use of high perimeter fencing or hoarding for site security and public safety, and placed so that PRoW are maintained or appropriately diverted;

b) use of site lighting at site perimeters, in accordance with section 2.6 and the BMS (**Volume 5.26.3C**);

c) use of appropriately trained and qualified security guards;

d) consultation with Avon and Somerset Police on security proposals for each site with regular liaison to review security effectiveness and response to incidents; and

e) immobilisation of plant out of hours, removing or securing hazardous materials from site, securing fuel storage containers and preventing unauthorised use of scaffolding.

2.9 Welfare

2.9.1 No living accommodation will be permitted on the construction site. Onsite welfare facilities will be provided for all site workers and visitors. Welfare facilities will be kept clean and tidy, in accordance with section 2.4 of this CEMP.

2.9.2 Construction compound cabins would be single storey only.

2.10 Pest Control

2.10.1 The risk of infestation by pests or vermin will be reduced by implementing appropriate storage and regular collection of putrescible waste. If infestation is found, removal and prevention measures will be implemented promptly. Any pest infestation of the construction site will be notified to the local authority as soon as is practicable.

2.11 Unexploded Ordnance

2.11.1 Risk assessments will be undertaken prior to each stage of construction commencing for the possibility of unexploded ordnance being found within construction areas. An Emergency Response Plan for unexploded ordnance will

be prepared by the contractors and will be followed to respond to the discovery of unexploded ordnance. This will include notifications to the relevant local authorities, emergency services, residents and businesses.

2.12 Utility Works

2.12.1 Appropriate schedules will be provided by National Grid and WPD to the contractors identifying all known utility infrastructure and any proposed diversions. Where changes to utility infrastructure cannot reasonably be avoided, the contractors will agree arrangements with National Grid and WPD and the owner of the utility equipment for it to be relocated.

2.13 Reinstatement on Completion

Condition Surveys

2.13.1 To facilitate the reinstatement of land, soil and watercourses, pre-condition surveys will be carried out of all land affected by the works. This will include a photographic record, written description and topographical survey, which will be used to ensure a complete and accurate reinstatement of land.

Reinstatement of Land and Soil

2.13.2 Reinstatement will include making good damage or disturbance to any soil structure, native or ornamental planting, grass, fencing, hard landscaping or structures, where in-situ reinstatement is possible.

2.13.3 Any land temporarily used for the construction of the Proposed Development will be reinstated in accordance with **Schedule 3, Requirement 15** and **Part 5, Articles 30 and 31 of** the DCO.

Reinstatement of Trees and Hedgerows

2.13.4 Where trees, tree groups or hedges are removed from working areas, construction compounds or temporary access routes, they will be replaced by new planting in-situ during reinstatement following completion of construction.

Reinstatement of Watercourses

2.13.5 Any temporary bridge or culvert required in connection with any stage of the Proposed Development will be removed within 12 months of completion of construction of that stage, in accordance with **Schedule 3, Requirement 20** of the DCO**.**

2.13.6 All watercourses would be reinstated on completion of works and specific measures for this are set out in the BMS in the CEMP at **Volume 5.26.3C**.

2.14 Consents and Licences

2.14.1 A number of sections of this CEMP reference consents, permits and licences that will be required during construction. A Consents Register will be maintained by the Environmental Manager which will document all existing consent conditions, record all new applications made and the status of the applications.

3 ENVIRONMENTAL MANAGEMENT AND CONSTRUCTION PRINCIPLES

3.1.1 This chapter of the CEMP describes the mitigation measures that will be implemented during the construction of the Proposed Development to reduce adverse effects as identified in the ES (**Volume 5.6.1 to 5.16.1**), in National Grid's environmental policy (**Annex B**) and WPD's environmental policy (**Annex C**).

3.1 Landscape and Views

Objective

3.1.1 To undertake construction mitigation measures so that adverse effects on landscape and visual amenity are reduced as far as practicable during the construction of the Proposed Development.

3.1.2 Mitigation measures relating to the operational phase of the Proposed Development, including site-specific planting schemes, can be found in the Overarching Mitigation Annex at **Volume 5.32B**.

3.1.3 In addition, there are a number of DCO Requirements (**Schedule 3**) relating to planting for the operational phase of the Proposed Development follows:

- Requirement 9: Provision of embedded landscape mitigation;
- Requirement 10: Replacement planting;
- Requirement 11: Implementation of landscaping and replacement planting;
- Requirement 12: Retention and protection of existing trees and hedgerows; and
- Requirement 15: Reinstatement schemes.

Mitigation Measures

Topsoil Bunding

3.1.4 Topsoil will be stockpiled around the edges of the construction compounds, as detailed in the SMP, to help screen the construction compounds from nearby receptors. In accordance with the mitigation measures proposed in the Hinkley Point C Connection Route Flood Risk Assessment (**Volume 5.23.5**) and detailed in section 3.4 of this CEMP, the stockpiled topsoil will have regular gaps to allow water to pass across the site and ensure there is no loss of floodplain. Stockpiled soils will be covered with appropriate measures, for example, membranes, spraying or seeding.

Temporary Steel Mesh Fencing with Tarpaulin

3.1.5 As set out in section 2.5 of this CEMP, all fencing described below will be implemented in accordance with **Schedule 3, Requirement 16** of the DCO.

A38 Bristol Road (Overhead Line) Compound

3.1.6 At the A38 Bristol Road (overhead line) compound, temporary steel mesh fencing with olive green tarpaulin (final colour to be discussed with the relevant planning

authority prior to erection of fencing) will be erected to a minimum height of 2m along the southern, western and northern boundaries of the western most compound. The fencing will be positioned on the outer edge of the construction compound, in front of the stockpiled topsoil. The tarpaulin will be raised to a minimum height of 0.6m above the ground to allow water to pass across the site and ensure there is no loss of floodplain.

River Axe

3.1.7 At the site of the underground cable works and cable bridge option to cross the River Axe near Waterfront Farm, Biddisham Lane, temporary steel mesh fencing with olive green tarpaulin (final colour to be discussed with the relevant planning authority prior to erection of fencing) will be erected to a minimum height of 2m north of the River Axe to provide partial screening of 400kV underground cables work in views from Waterfront Farm (including cottages and angling business). The fencing will be positioned on the outer edge of the working area. The tarpaulin will be raised to a minimum height of 0.6m above the ground to allow water to pass across the site and ensure there is no loss of floodplain.

Towerhead Road Compound

3.1.8 At the Towerhead Road compound temporary steel mesh fencing with olive green tarpaulin (final colour to be discussed with the relevant planning authority prior to erection of fencing) will be erected to a minimum height of 2m along the western and southern boundaries of the compound. The fencing will be positioned on the outer edge of the construction compound, in front of the stockpiled topsoil.

Engine Lane

3.1.9 At the works along Engine Lane, temporary steel mesh fencing with olive green tarpaulin (final colour to be discussed with the relevant planning authority prior to erection of fencing) will be erected to a minimum height of 2m along the west side of Engine Lane to screen views of the 132kV underground cables work. The fencing will be positioned in front of roadside hedgerow.

Nailsea Compound

3.1.10 At the Nailsea compound, temporary steel mesh fencing with olive green tarpaulin (final colour to be discussed with the relevant planning authority prior to erection of fencing) will be erected to a minimum height of 2m along the three sides of the compound nearest to Nailsea. This excludes the northwest boundary adjacent to the 132kV underground cable works. The fencing will be positioned on the outer edge of the construction compound, in front of the stockpiled topsoil.

Other Sites

3.1.11 Other sites have been identified (see **Table 3.1** below) along the route of the Proposed Development where the close proximity of construction working areas to residential properties means that fencing is appropriate to further reduce visual effects. No stage of the Proposed Development may commence until written details of all fencing provisions for other sites for that stage have been approved by the relevant planning authority in accordance with **Schedule 3, Requirement 16** of the DCO.

Table 3.1 Locations Suitable for Enhanced Mitigation in the Form of Fencing

Visual Receptor Reference	Receptor
B1.H47	Brick and pink render property at the junction between Butt Lake Road and Yardwall Road
B1.H48	'Wainbridge' at the junction between Mark Causeway and Yardwall Road
B1.H50	'Wainbridge Farm, north of Mark Causeway
B1.H51	Court Farm, north of Mark Causeway
B1.H52	Property to the south of Mark Causeway and to the south of receptor B1.H53
B1.H53	Properties north of Mark Causeway to the east of Court Farm
B1.H76	Property on the south side of Northwick Road
B1.H77	Sunnydene: Property on Northwick Road
B1.H108	Properties on the north side of the A38 Bristol Road at Tarnock
D1.H58	Moorland Park, single storey static caravans.
D1.H88	Hope Farm, Kenn Road (2-storey detached)
D1.H99	Rose Bungalow on Kennmoor Road between Manor Farm and Barberry Farm
D1.H128	Bungalows along Causeway View in Nailsea on the northwest settlement edge
E1.H7	Merriedown House on Old Lane, off Clevedon Road, Stone-edge Batch
E1.H27	Two storey property on the junction of Cuckoo Lane and Cadbury Camp Lane.
E1.H36	Caswell Cross Cottages, Caswell Hill (2-storey detached)
F1.H43	'Cole Acre' on Station Road
No receptor ref. See **Volume 5.31, paragraphs 2.2.3 to 2.2.4 and 2.3.7 to 2.3.9**	St Anthony's Park Transit Site with 20 pitches (and 20 emergency stopping place pitches)

Advance Planting

3.1.12 With respect to provisions for advance planting, and the retention of trees and hedgerows to aid compartmentalisation, National Grid is committed to the following measures at construction compounds (**Annex A** of this document also provides a schedule of the construction compounds, the Proposed Development components to which they relate, their estimated duration of use, the facilities they would accommodate and the approximate percentage of land to be used):

- trees and hedgerows on the perimeters of construction compound areas will be retained except for access and egress;
- trees and hedgerows within construction compounds will be retained except for access and egress; and
- at the large construction compounds (Tarnock – A38 Bristol Road; South of the Mendip Hills – Hams Lane; Barton Road; Castle Hill; and Sandford Substation (including the AT Route)), temporary planting will be carried out under advice from the Landscape Clerk of Works to aid screening and reduce the apparent scale and impact of the compounds.

Arboricultural Mitigation

3.1.13 National Grid is committed to planting four trees for each tree lost to the Proposed Development. This commitment acknowledges the value of trees in their own right and also that there is substantial risk of failure if a single tree is planted as a replacement for one to be lost.

3.1.14 Arboricultural mitigation for the construction phase will be delivered in accordance with measures set out in Sections 8 and 9 of the Arboricultural Impact Assessment (AIA) at **Volume 5.21.1B,** secured by **Schedule 3, Requirements 6, 10, 11 and 12** of the DCO and **Schedule 7** of the s106 Agreement between National Grid and the Joint Councils (**Volume 8.4B**).

3.1.15 Of particular relevance during the construction phase, **Schedule 3, Requirement 12(1)** of the DCO states that:

"No stage of the authorised development may commence until, for that stage, a Tree and Hedgerow Protection Strategy (THPS) prepared in accordance with BS 5837:2012 (Trees in relation to design, demolition and construction) identifying the trees, groups of trees and hedgerows to be retained during that stage has been submitted to and approved by the relevant planning authority."

3.1.16 The THPS will include tree protection plans, as detailed in Section 8 of the AIA; a schedule of all proposed tree and hedge removal and pruning, with annotated plans; specification for temporary physical protection for trees and hedgerows; and details of an auditable system of compliance.

3.1.17 In accordance with **Schedule 3, Requirement 12(3)** of the DCO, trees that are to be felled will be clearly identified. The Tree Impact Plans provided at **Volume 5.21.3B, Figure 21.2** and **Figure 21.3** will be refined where necessary, dependent on actual tree growth in relation to that predicted and any amendments to details of the Project in the Order Limits and Limits of Deviation.

3.1.18 Further mitigation measures for hedgerow loss specifically associated with the construction of the proposed 400kV underground cable through the Mendip Hills are detailed in the BMS at **Volume 5.26.3C**.

3.1.19 The management of waste arisings associated with surface vegetation removal, including trees and hedgerows, is detailed in the WMP (**Volume 5.26.2C**).

Inspections

3.1.20 A Landscape Clerk of Works (LCoW) will be appointed by National Grid to oversee and monitor all landscape works.

3.1.21 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP.

3.2 Biodiversity and Nature Conservation

Objective

3.2.1 The BMS is provided at **Volume 5.26.3C** and describes the mitigation measures that will be implemented during the construction of the Proposed Development. The objectives of the BMS are to:

- ensure that construction works will be carried out to control and minimise disturbance to ecological interests/receptors, including designated sites;
- ensure that appropriate measures are adopted to protect the ecosystems within the working area;
- avoid impacts on protected species in accordance with relevant good practice and statutory provisions and legislative requirements (as detailed in the BMS); and
- ensure that habitats are reinstated following completion of works.

3.2.2 The BMS will be updated to prior to and during each stage of the construction of the Proposed Development.

Mitigation Measures

3.2.3 The BMS describes the mitigation measures that will be implemented during the construction of the Proposed Development.

3.2.4 Prior to any stage of construction works commencing one or more appropriately qualified Ecological Clerk(s) of Works (ECoW) will be appointed by National Grid who will be responsible for ensuring the BMS is implemented.

3.2.5 The Project ECoW(s) will be members of the Chartered Institute of Ecology and Environmental Management (CIEEM), or hold equivalent accreditation and will report to the SHESQ Manager; they will oversee the works and be supported by appropriately experienced and licensed specialists and will call upon assistants during busy periods.

3.2.6 The Project ECoW(s) will:

a) ensure all workers comply with the site protocols regarding ecological receptors through delivery of toolbox talks and on-site supervision;

b) be available to answer questions on site as they arise and to advise accordingly;

c) carry out an Ecological Watching Brief (EWB);

d) co-ordinate licensed activities as per the licence method statements;

e) provide annual reports to the relevant planning authorities and other statutory bodies with respect to progress of works; and

f) on request of National Grid and WPD, meet landowners and occupiers to describe the BMS and its implications for their land interests.

Specific Construction Methods to Limit Duration of Habitat Loss

Mendips 400kV underground cable route

3.2.7 The hedgerow and grassland removal and reinstatement will be phased to minimise the amount of habitat lost to construction activities at any one time. Whilst the cables would be laid in sections, the haul road for this project component is assessed to remain in place for the duration of works.

Sandford Substation

3.2.8 To minimise the period of habitat loss at Sandford Substation, some reinstatement works will be undertaken in 2017, facilitating early reinstatement of habitats. **Volume 5.28.1.3, Figure 7.35.6** presents the Sandford Substation Landscape Mitigation Phasing to be implemented in accordance with **Schedule 3, Requirement 9** of the DCO.

Inspections

3.2.9 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP and measures outlined in the BMS. In addition, the ECoW will undertake monitoring as described in the BMS.

3.3 Geology, Soils and Land Affected by Contamination

Objective

3.3.1 To undertake the construction activities whilst reducing risks from contamination. The escape of stored materials, in particular liquids and hazardous materials, presents a risk to the environment. Storage, handling facilities and procedures will be designed to minimise that risk.

Mitigation Measures

3.3.2 The following measures will be implemented during the construction of the Proposed Development to reduce the risk of contamination cause by construction activities.

3.3.3 The following Environment Agency Pollution Prevention Guidance (PPGs) will be followed on site to prevent pollution.

a) Guidance for storing and handling materials and products:
    i) PPG2: Above ground oil storage tanks;
    ii) PPG 6: Working at construction and demolition sites;
    iii) PPG 7: Refuelling facilities;
    iv) PPG 26: Drums and intermediate bulk containers;
b) Guidance for site drainage, dealing with sewage and trade effluents:
    i) PPG 3: Use and design of oil separators in surface water drainage systems;
    ii) PPG 4: Disposal of sewage where no mains drainage is available;
    iii) PPG 13: Vehicle washing and cleaning;
c) Guidance on general good environmental practice:
    i) PPG 1: General guide to the prevention of pollution;
    ii) PPG 5: Works in, near or liable to affect watercourses; and
    iii) PPG 21: Pollution incident response planning.

Pre-Construction Activities

Contaminated Land

3.3.4 Contamination may be encountered when excavating any site for example oil, heavy metals, asbestos or other chemicals. Indications of contamination could include unusual colour, odour or appearance.

3.3.5 Technical baseline investigations have been undertaken during the design phase of the Proposed Development in line with the Model Procedures for the Management of Land Contamination (CLR11) (Ref 1.8). The results of the investigation will be provided to the contractors and have informed the ES. Site-specific intrusive ground investigation will be undertaken to assess whether remedial or mitigation works are required. The following actions will be undertaken on a site-specific basis in line with CLR11 (Ref 1.8):

a) review existing preliminary risk assessment data to identify areas that require further detailed assessment;
b) obtain updated unexploded ordnance survey for relevant sections of the Proposed Development (see also section 2.11 of this CEMP);
c) design and undertake appropriate site-specific intrusive ground investigation (GI);
d) undertake laboratory chemical and geotechnical or civil engineering soil and groundwater analysis;
e) undertake human health and controlled water generic quantitative risk assessment;
f) undertake detailed quantitative risk assessment where identified as necessary after site-specific GI;

g) undertake remedial action, options appraisal and/or design where identified through GI;

h) implement the detailed mitigation measures or remedial works; and

i) verify the implemented mitigation measures or remedial works.

3.3.6 Site-specific intrusive ground investigation will be undertaken to inform geotechnical, ground stability and civil engineering assessments. A review of existing baseline data will be undertaken to identify areas that require further detailed assessment as required. The results of the investigations will be used to inform foundation design and design of temporary works to ensure the stability of the Proposed Development.

3.3.7 In accordance with **Schedule 3, Requirement 18** of the DCO, all proposed remediation and detailed mitigation measures will be presented in detail to the local authority and other appropriate regulators for approval prior to implementation. Following completion of measures identified in the approved remediation scheme, a verification report that demonstrates the effectiveness of the remediation carried out will be produced, and be approved by the Environment Agency and relevant Local Authority.

3.3.8 Professional advice will be sought only from those with demonstrable specialist competency in risk-based management of land contamination.

3.3.9 A watching brief will be undertaken during piling and foundation works to look out for evidence of (unexpected) contaminated soils. Unusual colour, odour or appearance can be indicative of the presence of contaminants. Work will stop if any previously unidentified contamination is encountered until the nature and concentration of the contaminants are determined and appropriate risk control measures implemented (in accordance with section 1.13 of this CEMP).

Utilities

3.3.10 Prior to intrusive investigations commencing appropriate service clearance surveys and utility searches will be undertaken to identify below ground services and utilities to avoid damage to third party property. This will include liaison with the relevant owner and operator to accurately identify the precise location of services/utilities (as described at section 2.12 of this CEMP).

Piling Risk Assessment

3.3.11 Boreholes will be drilled at each pylon location. The result of the borehole analysis will determine where piling will be required. Site-specific piling risk assessments will be undertaken where necessary to consider the hazards associated with the piling method in potentially contaminated ground and in relation to the ground and groundwater environment. Any subsequent mitigation identified by risk assessment will be agreed with the EA prior to construction commencing; this will specifically include the control, storage and disposal of contaminated arisings to prevent adverse effects to the environment including surface water features, drains and rhynes.

3.3.12 Where piling works are undertaken in areas of land affected by contamination, the contractor will adhere to appropriate guidance described in the Ground

Environment ES chapter at **Volume 5.9.1** including the Model Procedures for the Management of Land Contamination (CLR11) (Ref 1.8) and GPLC1 – Guiding Principles of Land Contamination.

3.3.13 Boreholes can contain geo-archaeological and palaeo-environmental evidence. A method for geo-archaeological and palaeo-environmental sampling and analysis is provided in the WSI (CEMP Appendix 3, **Volume 5.26.4C**) which identifies locations where borehole samples should also be obtained for archaeological analysis.

3.3.14 The site-specific piling risk assessments will be cross referenced to the archaeological constraints plans in the WSI (CEMP Appendix 3, **Volume 5.26.4C**) to identify where archaeological mitigation measures may also be required, or to identify areas where archaeological mitigation proposals may be constrained by potentially contaminated ground.

Construction Activities

Soil Management Plan

3.3.15 Measures to protect soils will be set out in a SMP and will include, but not be restricted to, the following measures:

a) construction traffic will be restricted to operating on the designated access roads and not on the unprotected soils;

b) topsoil stripping will be restricted to the width of the permanent and temporary elements of the Proposed Development, thereby minimising disturbance to the integrity of the biomass;

c) appropriate geotextile membranes, wooden matting or aluminium trackways will be used over particularly sensitive areas;

d) in peaty and soft saturated clay soils, where the use of geotextile membranes is not appropriate, wheeled vehicles may be fitted with low ground pressure bearing pneumatic tyres to allow a greater distribution of weight;

e) soil loosening techniques such as deep-tine cultivation will be used where required to break up any compaction which has occurred;

f) subsoil and different superficial deposits will be stored separately to prevent mixing and will be reinstated in reverse order of excavation;

g) topsoil and subsoil movements will only be undertaken in suitable conditions, for example, when it is not too wet, in accordance with DEFRA guidance (Ref 1.9);

h) soil stabilising methods will be undertaken in accordance with the SMP to reduce the risk of erosion, the creation of leachate and potential water quality issues;

i) early re-seeding of the reinstated ground will be undertaken to help re-establish and stabilise the structure of the topsoil;

j) soils will not be stockpiled close to surface water features. Stockpiled soils will be stored on an appropriate impermeable surface material and covered to reduce the risk of windblown dust, surface water run-off and to reduce the risk of overland migration of silt and sediment to surface waters. Stockpiled

soils will be protected by appropriate measures, for example, membranes, spraying or seeding; and

k) at the outset, the potential for variations to these measures being required as a result of varying weather conditions, such as heavy rainfall, drought or frost, will be built into the SMP.

3.3.16 The SMP will be approved by the consenting authority prior to the commencement of any stage of construction works.

Specification, Supply and Use of Materials

3.3.17 Where there is a suitable recycled or otherwise sustainable material which can be cost-effectively used, it will be preferred. Good practice in design and procurement will be adopted to keep stocks of materials to a minimum. The provenance of bulk materials (primary or secondary aggregates) will be reviewed, documented and, if necessary, chemically tested by the supplier, prior to delivery to site, to confirm that they are suitable for use. Such materials will be accompanied by a certificate of provenance, including evidence of compliance with Quality Protocol Standards (under the Waste Protocols Project) where appropriate; for example, in the supply of recycled aggregates.

Storage and Handling Requirements

3.3.18 The proposals for the storage of waste on site are detailed in the WMP (**Volume 5.26.2C**). Details will also be provided in the SWMPs. Facilities will be provided for the collection, segregation, treatment and disposal of solid and liquid waste in accordance with the WMP.

3.3.19 The following measures will be implemented on site for the storage of materials:

a) all oil and diesel storage facilities will be at least 30m from any watercourse including surface water drains and rhynes; and at least 50m from any borehole or well;

b) spill kits and drip trays will be provided for all equipment and at locations where any liquids are stored and dispensed;

c) storage areas for solid materials, including waste soils, will be designed and managed to prevent deterioration of the materials and their escape (via surface run off or wind blow);

d) storage areas will be kept secure to prevent acts of vandalism that could result in leaks or spills; and

e) all containers of any size will be correctly labelled indicating their contents and any hazard warning signs.

Fuel Tanks, Mobile Bowsers and Bunds

3.3.20 In accordance with the Oil Storage Regulations (2001) the following measures will be implemented on site for the prevention of spills:

a) fuel tanks and mobile bowsers (and any other equipment that contains oil and other fuels) will have a secondary containment, for example, double skinned tanks. All tanks and mobile bowsers will be located in a sealed impervious bund;

b) fuel fill pipes will not extend beyond the bund wall and will have a lockable cap secured with a chain;

c) any tap or valve permanently attached to a tank or bowser through which fuel can discharge, will be fitted with a lock;

d) where fuel is delivered through a pipe permanently attached to a tank or bowser:

    i) the pipe will be fitted with a manually operated pump or a valve at the delivery end which closes automatically when not in use;

    ii) the pump or valve will be fitted with a lock;

    iii) the pipe will be fitted with a lockable valve at the end where it leaves the tank or bowser;

    iv) the pipework will pass over and not through bund walls;

    v) tanks and bunds will be protected from vehicle impact damage; and

    vi) tanks will be labelled with contents and capacity information.

e) all valves, pumps and trigger guns will be turned off and locked when not in use. All caps on fill pipes will be locked when not in use.

3.3.21 Suitable precautions will be taken to prevent spillages from equipment containing small quantities of hazardous substances (for example, chainsaws and jerry cans) including:

a) each container or piece of equipment will be stored in its own drip tray made of a material suitable for the substance being handled; and

b) containers and equipment will be stored on a firm, level surface.

Drum Storage

3.3.22 In accordance with the Oil Storage Regulations 2001, where oil drums are over 200 litres it will be ensured that:

a) multiple drums and containers have suitable secondary containment with sufficient capacity to contain at least 25% of the total volume of the containers or 110% of the largest container, whichever is the greatest;

b) drum storage areas will be covered to prevent rainwater getting into bunds and drum pallets;

c) drums will be labelled and positioned such that leaks cannot overshoot the bund or drip tray wall; and

d) all containers are stored securely when the site is unattended.

Flammable and Hazardous Substances

3.3.23 All flammable and hazardous substances will be kept in a secure bunded cupboard, cabinet or tank constructed of materials which are chemically resistant to its contents.

Deliveries and Dispensing

3.3.24 For deliveries and dispensing activities it will be ensured that:

a) site-specific procedures are in place for bulk deliveries;

b) delivery points and vehicle routes are clearly marked;

c) emergency procedures are displayed and a suitably sized spill kit is available at all delivery points, and staff are trained in these procedures and the use of spill kits;

d) suitable facilities (for example, drip trays, drum trolleys, funnels) meet the sites specific dispensing needs and are maintained and used;

e) tank capacities and current contents levels are checked prior to accepting a delivery to ensure that they are not overfilled;

f) all deliveries are supervised throughout the delivery operation;

g) spill prevention equipment is used during dispensing activities; and

h) all spillages occurring during dispensing and handling activities are cleared up and reported via the SHESQ Manager and are dealt with in accordance with section 1.13 of this CEMP.

Vehicles and Plant

3.3.25 The use of vehicles and plant poses similar risks to those posed by storage of liquids. Fuel and oil may leak from such equipment which may enter drains and/or watercourses, as well as contaminating the ground itself. The following measures will be implemented to reduce this risk:

a) vehicles and plant provided for use on the site will be in good working order to ensure optimum fuel efficiency, and are free from leaks. Plant with integral bunding and/or drip trays will be specified;

b) sufficient spill kits will be carried on all vehicles;

c) any hired vehicles and plant will be checked on delivery and not accepted if they are not in good working order for example, leaking, excessive fumes, excessive noise and/or smoke;

d) vehicles and plant will be regularly maintained to ensure that they are working at optimum efficiency and are promptly repaired when not in good working order;

e) vehicles and plant will not park near or over drains and will be washed in accordance with the commitments in the CTMP (**Volume 5.26.5C**);

f) employee-owned vehicles will not be driven or parked in construction areas or cable swathe unless authorised to do so;

g) topping up of vehicles and plant will be carried out on hardstanding using drip trays and not over or near drains, or, where this is not reasonably practicable, drip trays and/or drain covers will be used to reduce the risk of spills;

h) vehicles and plant will not be overfilled with fuel; and

i) plant containing oils will be inspected daily and maintained to both prevent and identify leaks.

De-watering

3.3.26 Deep excavations may require de-watering. Water pumped or removed from excavations will be passed through a silt-separator tank or equivalent, and discharged to ground or surface water. A permit would be sought from the EA prior to undertaking such operations. Details would be provided in a DMP.

Drainage

3.3.27 Extended excavations will be arranged so as not to create preferential drainage pathways with the potential to cause flooding of lower land. Appropriate measures will be implemented such as the introduction of baffles or creation of sumps to reduce the risk of preferential drainage paths being created. This will be detailed and implemented via a DMP.

3.3.28 Land drains may be encountered during construction. Where these are encountered they will be either repaired or diverted to ensure that preferential pathways are not created.

Coal

3.3.29 National Grid has completed a coal risk assessment for works in the area of Nailsea at the former coal working site. It identifies that the construction of the Proposed Development should not disrupt the site. The assessment has been agreed with North Somerset Council and the Coal Authority.

3.3.30 In addition site investigation and piling works will reference the "Guidance on Managing the Risk of Hazardous Gases when Drilling or Piling Near Coal: The Coal Authority, Health and Safety Executive, British Drilling Association, Federation of Piling Specialists and the Association of Geotechnical and Geoenvironmental Specialists. Published 2012." Measures appropriate to the site for the protection of people and property will be incorporated into the site specific working plans.

3.3.31 Where intact coal seams are present or exposed in excavations, there is a potential risk of combustion. Should these be encountered, exposed sections will be covered (blinded) with a suitable material such as a weak mix concrete

3.3.32 During construction, the contractor will be aware of any disturbances to the area. All construction workers will be briefed via toolbox talks on the site history; the potential for the presence of below ground mining features; and to remain vigilant for any sudden or unexpected changes in ground conditions.

Gas Monitoring

3.3.33 Gas monitoring will be undertaken during pre-construction site-specific ground investigation and during the construction or demolition phases of the Proposed Development. The purpose of the gas monitoring is to ensure that suitable safeguards are in place to provide a safe working environment. Gas monitoring will be undertaken in accordance with guidance documents such as:

- BS 8576: 2013: Guidance on investigations for ground gas – permanent gases and volatile organic compounds (VOCs), BSI Standards Publication;
- BS 10175: 2011+A1: 2013: Investigation of potentially contaminated sites. A code of practice, BSI Standards Publication;
- BS 8485: 2007: Code of practice for the characterization and remediation from ground gas in affected developments, BSI Standards Publication; and
- BS 5930: 1999+A2: 2010: Code of practice for site investigations, BSI Standards Publication.

3.3.34 All gas monitors that are used will be calibrated and tested with copies of supporting certificates available on site. Provisions will be made to ensure that sufficient monitors are available at all times during works to cover all tasks.

3.3.35 Gas monitors may be carried by individuals or placed at appropriate locations in relation to the works being undertaken. The monitors will be placed to ensure that the atmosphere being tested is the same as that to which potential receptors are exposed. A monitoring regime will be designed to address the works being undertaken. The following bulk gases will be tested for:

- Methane (CH_4);
- Carbon dioxide (CO_2);
- Oxygen (O_2);
- Carbon monoxide (CO); and
- Hydrogen sulphide (H_2S).

3.3.36 The following recommended trigger levels and action levels, presented within the Coal Authority guidance: Guidance on Managing the Risk of Hazardous Gases when Drilling or Piling Near Coal, 2012; measured within the general working area are presented in **Table 3.2**.

3.3.37 Should concentrations of gas exceed a trigger level, further assessment and if required provision of additional mitigation (as required) would be implemented. Should concentrations of gas exceed an action level, works would immediately be halted, the working area would be evacuated and no return to the affected area until a competent person has investigated and assessed that it is safe to do so.

Table 3.2 Recommended Trigger and Action Levels for Primary Bulk Gases

Gas	Trigger Level	Action Level
Methane	≥0.1% v/v	≥1% v/v (20% LEL)
Carbon dioxide	≥0.5 % v/v (LTEL)	≥1.5 % v/v (STEL)
Oxygen	≤19 % v/v	≤18 % v/v

Gas	Trigger Level	Action Level
Carbon monoxide	≥30ppm (LTEL)	≥100ppm (50% STEL)
Hydrogen sulphide	≥1ppm (20% LTEL)	≥5ppm (50% STEL)
Notes: LTEL – long-term exposure limit (8 hour time weighted average (TWA) reference period); STEL – short-term exposure limit (15min reference period) – Reference EH40/2007 and 2011 Workplace Exposure Limits , Health and Safety Executive (HSE). LEL – lower explosive limit; ppm – parts per million; v/v – volume/volume		

Road Sweeping

3.3.38 Road sweeping will be undertaken where required and in accordance with the CTMP (**Volume 5.26.5C)**, to remove deposits of silt from roads and reduce the risk of silt being washed into surface water gullies and watercourses.

Inspections

3.3.39 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP.

3.3.40 In particular the following monitoring will be undertaken:

a) a watching brief will be carried out, where necessary, during piling and foundation works for unexpected contamination;

b) bulk materials imported to site will be assessed, as described in paragraph 3.3.17;

c) ground gas, in particular methane and carbon dioxide will be monitored when work is undertaken in areas underlain by coal measures or workings;

d) ground and surface water conditions will be monitored for spills or uncontrolled tipped surface spoil;

e) oil tanks and associated bunds will be monitored for leaks; and

f) plant containing oils will be inspected daily and maintained to both prevent and identify leaks.

3.4 Protection of the Water Environment

Objective

3.4.1 To comply with relevant statutory provisions including any consents required in respect of the water environment; to protect both physical habitat and morphology and to avoid unacceptable adverse effects including changes to flows, water levels and water quality due to construction.

Mitigation Measures

3.4.2 The following EA Pollution Prevention Guidance (PPGs) will be followed on site to prevent pollution.

a) Guidance for storing and handling materials and products:
   i) PPG2: Above ground oil storage tanks;
   ii) PPG 6: Working at construction and demolition sites;
   iii) PPG 7: Refuelling facilities; and
   iv) PPG 26: Drums and intermediate bulk containers.

b) Guidance for site drainage, dealing with sewage and trade effluents:
   i) PPG 3: Use and design of oil separators in surface water drainage systems;
   ii) PPG 4: Disposal of sewage where no mains drainage is available; and
   iii) PPG 13: Vehicle washing and cleaning.

c) Guidance on general good environmental practice:
   i) PPG 1: General guide to the prevention of pollution;
   ii) PPG 5: Works in, near or liable to affect watercourses; and
   iii) PPG 21: Incident response planning.

3.4.3 In accordance with **Schedule 3, Requirement 17** of the DCO, a DMP will be produced, following detailed drainage investigations and hydrological assessments, which will determine potential risks in relation to the water environment, including land drains, and identify appropriate control measures to avoid or reduce the risks. Examples of the mitigation measures that will be implemented to reduce the risk to the water environment are described below. A series of DMPs will be produced covering discrete sections of the route and each construction compound. Each DMP will be approved by the consenting authority prior to the commencement of any stage of construction works.

Surface Water Discharges

3.4.4 Construction activities may adversely affect the quality of surface water or ground water as a result of contaminated runoff from, or spillages on the construction site. Control and mitigation measures to be implemented to prevent pollution include:

a) dewatering of all excavations to be subject to a permit and/or land drainage consent from the EA or the IDBs, as appropriate; the process proactively managed to meet at least the permit conditions;

b) no silty water to be pumped directly into any watercourse but to be allowed to settle out (for example, in settlement lagoons) or filtered (for example, using straw bales to filter out coarse particles) prior to discharge, in accordance with permit conditions;

c) where settlement or filtering is not practicable or effective, alternative disposal options will be considered for example, discharge onto a grassed or vegetated area (with consent from the landowner and following EA or IDB consultation as appropriate), and discharge to foul sewer (with consent from the local sewerage undertaker);

d) if clean water is discharged into a watercourse, a baffle will be fitted to the discharge point to prevent disturbance of the watercourse bed;

e) watercourses will be protected from contaminated surface water run-off by using French drains, cut off ditches, grips, silt fences or bunds round the edge of watercourses. Numerous small, passive mitigation measures will be installed in preference to one large treatment system to prevent large-scale water build-up, using Sustainable Drainage Systems (SuDS) principles;

f) existing and new surface water drains will be kept clear of silt or weed build-up;

g) roads and hard surfaces will be kept clean, to prevent a build-up of mud and sediment that could contaminate surface water; and

h) implementation of a monitoring schedule to ensure that measures taken to protect watercourses, boreholes and wells are effective.

3.4.5 Working areas, where possible will not be within 9m of watercourses. Where this is not possible, approaches will follow guidance in *PPG5: Works in, near or liable to affect watercourses.*

3.4.6 Works in proximity to watercourses are subject to consenting regimes. Consent is required to ensure works do not increase flood risk, damage flood defences, or harm the environment, fisheries, or wildlife. These include:

- Consents under the Water Resources Act 1991 and associated byelaws, which require a consent from the Environment Agency for works in, over, under or adjacent to main rivers.

- Consents under the Land Drainage Act 1991, which require the consent of the internal drainage board, or unitary or county council to construct or alter a culvert or flow control structure (such as a weir) on any ordinary watercourse. Land Drainage Consent will be sought for all new and altered watercourse crossings.

- Works on or near watercourses may also be subject to a number of different land drainage byelaws, and will require consent from IDBs.

Other Discharges

3.4.7 Other effluents may be produced that need to be properly managed and controlled in order to prevent contamination of surface water. The contractor will ensure that:

a) washing of equipment using detergent is carried out at commercial facilities only;

b) washing of vehicles and equipment without the use of detergent is only carried out at either commercial facilities, or at purpose-built wash stations where the water is contained for controlled disposal;

c) all foul effluent will be contained; and

d) the foul effluent container will be subject to daily inspection and a maintenance and emptying schedule as recommended by the manufacturer. The effluent will be removed by tanker and disposed of at a licensed facility.

Disposal of Accumulated Rainfall/Surface Water

3.4.8 Rainwater and surface water may accumulate in a number of locations on site, for example in uncovered bunds and drip trays. This has the potential to become contaminated. To reduce this risk, the following measures will be included in the DMP:

a) bunds or drum pallets will be covered, where possible, to prevent the accumulation of rainwater. Where this is not possible, (c) will be followed;

b) interceptor type drip trays will be provided rather than standard drip trays (for locations where drip trays will be permanently in place) or plant nappies (for mobile plant);

c) if a standard drip tray or uncovered bund is used, the contractor will:

i) ensure it is regularly inspected (daily) and emptied either via tanker and disposed of immediately off site at an appropriately licensed facility (for large quantities) or to an on-site, bunded, storage facility for later off-site disposal (small quantities). The inspection frequency will increase during times of frequent rainfall;

ii) check water from uncovered bunds for obvious signs of contamination (for example, visible oil and smells) in order that the correct disposal option can be identified;

iii) ensure that only uncontaminated water is disposed of by draining it onto a grassed or stoned area on the site which is at least 10m from any drains and 50m away from any boreholes or wells. If contaminated, it will be disposed of as Hazardous Waste; and

iv) ensure that any oil present is absorbed using a spill kit and disposed of as Hazardous Waste.

Permitted Discharges

3.4.9 Discharges, other than uncontaminated surface water run-off, will require a permit from the Environment Agency (for discharges to controlled waters, including rivers, other watercourses and soakaways) or the local sewerage undertaker (for discharges to sewer). Such discharges may also require land drainage consent from the relevant IDB. Discharges will not be made without prior consent from the EA, IDB or sewerage undertaker, as appropriate. To ensure discharges are appropriately authorised, the following measures will be followed:

a) consult with the appropriate consenting body before any discharge is expected to be required from the site and obtain a permit, or where a permit is not required, obtain written confirmation that one is not required;

b) ensure that any permitted discharge is sampled and analysed at the frequency specified in the permit to ensure compliance and that monitoring results are kept. More frequent analysis may be required if analytical results indicate that limits are being approached or exceeded; and

c) ensure that the consenting body is advised if results indicate that limits are being exceeded, and report the occurrence as an incident in accordance with section 1.13 of this CEMP. Take immediate steps to rectify the situation; check receiving water for pollution resulting from exceedance; carry out any remediation works necessary.

Abstraction Licenses

3.4.10 Where water is required from a potable water supply or natural resource (for example, for hydrostatic testing), an Abstraction Licence will be obtained from the local water company or EA, as appropriate. It will be ensured:

a) any necessary Abstraction Licences are obtained or other sources of water are provided in cases where an Abstraction Licence is not granted;

b) Abstraction Licence conditions are complied with;

c) volumes of water abstracted are recorded; and

d) a permit is obtained to discharge abstracted water to ground or via a sewer, soakaway or watercourse on completion of hydrostatic testing.

Flooding

3.4.11 The Hinkley Point C Connection Route Flood Risk Assessment (FRA) at **Volume 5.23.5** identifies mitigation measures to reduce flood risk during the construction phase of the Proposed Development. The FRA proposes the following mitigation measures which will be built into the detailed design and implemented on site.

Stockpiling of Topsoil

Table 3.3 Proposed Mitigation Measures for Topsoil Stockpiling

Mitigation	Reason	Mitigation Reference
Stockpiles will be located on higher ground (i.e. outside Flood Zone 3) where practicable.	To minimise loss of floodplain volume. To minimise the risk of top soil being washed away in the event of a major flood event.	S1
Each stockpile will not exceed 25m in length.	To minimise disruption of flow paths and maintain hydraulic continuity of the floodplain around both ends of each stockpile.	S2
There will be a minimum gap of 25m between adjacent stockpiles, except where both adjacent stockpiles are shorter, in which case the gap must be at least as long as the longest adjacent stockpile. Some stock pile lengths and associated gaps may only be 10m.	To prevent trapping large volumes of water behind the stockpiles and to maintain natural flow paths.	S3
Where stockpiles are placed on both sides of the haul road the gaps between them should coincide.	To maintain connectivity of flow paths.	S4
Gaps in the stockpiles will be located to preserve existing low points and flow paths.	To minimise the interruption of natural flow routes.	S5
Stockpiles should not exceed 1.4m above the existing ground level, and be less than 8m wide at the toe.	To retain a workable footprint width using typical construction plant for the stockpile with 1:2.5 side slopes and a crest width of up to 1m.	S6
Sections of haul road with stockpiles alongside will not exceed a total of 1/3 of the length of all haul roads within Flood Zone 3.	To prevent floodplain compartmentalisation and to maintain natural flow paths.	S7
Stockpiles to be seeded to encourage stabilisation of topsoil.	To prevent sedimentation of watercourses. To prevent loss of topsoil in a major flood event, thereby reducing the availability of material for reinstatement.	S8

Haul Roads

Table 3.4 Haul Road Mitigation Measures

Mitigation	Reason	Mitigation Reference
Haul roads generally to be as close to ground level as possible (between 50mm and 100mm above the ground surface except where crossing peat or embanked over watercourse crossings. Where haul roads cross peat they must be on floating roads with drainage pipes.	To avoid disrupting flow paths and compartmentalising the floodplain thereby losing the hydraulic connection between the "upstream" and "downstream" sides of the haul road. Slightly raised road surface is required to allow to drain. Floating roads on peat to have drainage pipes to retain floodplain connectivity.	H1
Where haul roads cross any rhyne, no stockpile is to be placed within 9m of the top of either bank.	The IDB require access on both banks for maintenance and to minimise flow impedance around the structure.	H2
Haul roads will be constructed of material that is at least as permeable as the topsoil removed, where practicable.	To retain the natural runoff (Greenfield) rate.	H3
Runoff from haul roads will generally not be drained via a piped or open channel drainage system. Runoff will discharge directly from the haul road to allow it to filter through vegetated verges. Where settlement or filtering is not practicable or effective, alternative disposal options would be considered for example, discharge onto a grassed/vegetated area (with consent from the landowner and following EA consultation). No formal haul road drainage system to be constructed except where floating roads are used on peat.	To retain natural drainage as far as possible; To reduce the likelihood of rapid runoff from the haul road and minimise erosion; To prevent sediment washing off the haul roads and entering watercourses (to maintain water quality).	H4
All haul road construction material to be removed at the end of construction and reinstatement with stockpiles of topsoil to a level slightly above natural ground level (typically <50mm).	To return the haul roads to a natural condition, allowing for settlement of reinstated topsoil.	H5

Compounds

3.4.12 **Table 3.5** describes the measures to reduce the risk of flooding for each construction compound. The compounds will be erected in accordance with the FRAs. Each measure is given a specific reference (C1 to C7). Depending on the location of specific compounds different measures may be appropriate, largely driven by the Flood Zone in which the compound is located. **Table 3.6** summarises each compound, the route section in which it is located, and the proposed measures.

Table 3.5 Compound Mitigation Measures

Mitigation	Reason	Mitigation Reference
Compounds will be surfaced with material that is at least as permeable as the topsoil to be removed, where practicable. This is with the exception of the use of bitumen (20mx20m) for a platform for the crane at the A38 Compound.	To retain natural runoff (Greenfield) rate.	C1
Any runoff from the compounds will be to the vegetated ground in line with SuDS principles. SuDS measures may include attenuation storage; infiltration trenches/soakaways. Where settlement or filtering is not practicable or effective, alternative disposal options would be considered for example, discharge onto a grassed/vegetated area (with consent from the landowner and following EA consultation).	To avoid disruption to natural flow paths; To retain natural runoff (Greenfield) rate; To avoid discharge of sediment into watercourses (to maintain water quality).	C2
At sites with bunds or other forms of visual / acoustic barriers, ensure appropriate gaps in the screening (or culverts through earth bunds where these are used).	To allow free flow of water in the main direction of flow across the compound; To allow free drainage of surface water from the compound.	C3
Offices and other site facilities will be raised above the modelled 1 in 10 (10%) annual probability event level where modelled data are available. Where not available this would be estimated from the best available information. Facilities could be elevated on stilts, or in some cases, located on the higher areas of the compound.	To minimise loss of floodplain storage. To minimise risk of equipment being mobilised by flood waters, impacting somewhere else downstream; To allow free flow of water across the compound in a flood event.	C4

Mitigation	Reason	Mitigation Reference
Minimal stockpiling of materials. Where storage of materials is necessary, store above the 1 in 10% (10%) annual probability event level.	To minimise loss of floodplain storage; To minimise risk of materials being mobilised by flood waters, impacting somewhere else downstream; To allow free flow of water across the compound in a flood event.	C5
Minimal storage of potential pollutants e.g. fuel, hazardous substances.	To minimise risk of pollution of watercourses, as well as mobilisation of drums and other storage containers that could result in downstream impacts.	C6
Site closure and evacuation plan.	To minimise loss of plant, materials, risk to operatives in a flood event; and To minimise risk of pollution of flood water.	C7

Table 3.6 Site Specific Mitigation Measures for Each Compound

Route Section	Compound Name	National Grid Reference	Greenfield Runoff Allowable Discharge	Mitigation Reference
A	Bridgwater Tee (Bath Road)	3327 1396	7.0	C1-7
B	A38 Bristol Road (Underground Cables)	3375 1529	7.7	C1-7
B	A38 Bristol Road (Overhead Line)	3373 1530	7.7	C1-7
B	South of the Mendip Hills (Hams Lane)	3373 1544	7.7	C1-7
C	Barton Road	3383 1563	9.2	C1-2
C	Castle Hill	3406 1583	8.9	C1-2
D	Towerhead Road	3412 1595	9.7	C1-2
D	AT Route Overhead Line Compound	3413 1607	8.5	C1-7
D	Sandford Substation Compound	3415 1603	8.5	C1-2
D	Engine Lane	3456 1695	8.7	C1-2
D	Nailsea	3461 1708	8.5	C1-2
D	Church Lane	3459 1717	8.8	C1-7
E	Clevedon Road	3462 1719	8.8	C1-2
E	Whitehouse Lane	3480 1730	9.1	C1-2

Route Section	Compound Name	National Grid Reference	Greenfield Runoff Allowable Discharge	Mitigation Reference
E	Caswell Hill	3490 1748	9.2	C1-2
F	Sheepway	3487 1757	9.2	C1-7
F	BW Underground Cable Route West	3491 1767	9.2	C1-2
G	BW Underground Cable Route East	3513 1764	8.4	C1-7
G	St Andrews Road	3518 1787	8.1	C1-7
G	Kings Weston Lane	3534 1789	8.1	C1-7
G	G Route Underground Cables (East of M49)	3539 1789	8.1	C1-7
G	Seabank (Severn Road)	3540 1821	7.9	C1-7

Culvert Crossings

3.4.13 Temporary culvert crossings will be constructed to minimise the impact on flood risk using the mitigation measures outlined in **Table 3.7**.

Table 3.7 Culvert Mitigation Measures

Mitigation	Reason	Mitigation Reference
Culvert size to be selected to minimise afflux (maximum afflux of 100mm), and invert level to be determined by topographic survey. Over-pumping during installation of culverts (as required).	Maintain existing conveyance capacity and hydraulic performance, allowing for seasonal level and flow changes	W1
No multiple pipes.	Maintain existing conveyance capacity and minimise risk of collection of debris	W2
Box culverts will have no concrete bedding.	Minimise environmental damage	W3
Circular culverts will have concrete bedding on IDB ditches.	Prevent settling and therefore loss of flow capacity	W4
Headwalls will have a batter.	Stability	W5
Maintain minimum clearance of overhead lines over watercourses: 10.9m above bank level in the case of overhead lines over Main Rivers; 8.1m in the case of 400kV overhead lines over ordinary watercourses; and 7m in the case of 132kV overhead lines over ordinary watercourses.	Ensure safe access for watercourse maintenance	W6

Bridge Crossings

3.4.14 Permanent bridge crossings will be constructed to minimise the impact on flood risk using the mitigation measures identified in **Table 3.8**.

Table 3.8 Bridge Crossings Measures

Mitigation	Reason	Mitigation Reference
Bridge soffit will be above the 100 year flood level plus 600mm to allow for climate change and freeboard.	Minimise loss of channel capacity.	B1
No piers in the watercourse	Minimise loss of channel capacity	B2
Maintain minimum clearance of overhead lines over watercourses: 10.9m above bank level in the case of overhead lines over Main Rivers; 8.1m in the case of 400kV overhead lines over ordinary watercourses; and 7m in the case of 132kV overhead lines over ordinary watercourses.	Ensure access for maintenance	B3

Laying Underground Cables

3.4.15 The method of laying underground cable will require topsoil stripping. Where physically and technically possible, the topsoil stripped from within Flood Zone 3, wherever it is close to the boundary with Flood Zone 1, will be stockpiled in Flood Zone 1. The material stripped within Flood Zone 1 will be stored within the same zone. In all cases, stockpiling mitigation measure constraints will be observed. Trenches for cable laying are open for a short term only, being backfilled as the cable laying progresses, therefore, the associated stockpiles are not included in the floodplain displacement volume calculations.

Flood Warning, Escape and Evacuation

3.4.16 Details of evacuation plans for different parts of the proposed route will be developed prior to commencing construction and will detail the procedure to be followed once a flood warning is received, either from the Environment Agency for fluvial/tidal flooding, or from Bristol Water for a reservoir breach. Primary considerations for the evacuation plan include:

- **evacuation of personnel** from the working areas at risk of flooding – this is the primary safety consideration, and is the highest priority in the unlikely event that there is insufficient time to undertake the following activities;
- **making the site safe** and prior to evacuation – this would include appropriate storage of equipment and materials, securing items within site compounds to prevent them being mobilised in flood water; and
- **removal of critical plant and equipment** from Flood Zone 3 – this may be removal from the haul roads or from the compounds, and could include raising critical items above the design flood level or removing them from the floodplain completely to a suitable alternative compound. At construction stage, the

contractor would identify the need (or not) to remove equipment from working areas based on the flood warnings.

3.4.17 Potential evacuation routes that will be used for all compounds located within Flood Zone 3 and for compounds in other Flood Zones that are surrounded by Flood Zone 3 are listed in **Table 7.10** of the Route FRA at **Volume 5.23.5.1A**.

Inspections

3.4.18 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP.

3.5 Historic Environment

Objective

3.5.1 A WSI has been prepared which provides the framework for the proposed approach to mitigate the construction phase effects of the Proposed Development on heritage assets with archaeological interest. This is provided at **Volume 5.26.4C**. The mitigation measures summarised in this section of the CEMP are described in further detail in the WSI.

3.5.2 Detailed archaeological method statements will be provided for the stages of the archaeological works outlined in the WSI and secured via **Schedule 3, Requirement 6** of the DCO. The method statements will outline the techniques and approaches that will be used in providing the field surveys proposed in the WSI.

Mitigation Measures

3.5.3 The local planning authorities' archaeological representatives and Historic England are collectively referred to as 'the relevant consultees' in the WSI. These parties will represent the relevant planning authority in approving the detailed method statements, in accordance with **Schedule 3, Requirement 6** of the DCO. The locations provisionally identified for further assessment and mitigation works will be subject to appropriate consultation and agreement with the relevant consultees, prior to field work commencing. Any amendments to these locations, or to the area and site specific strategies proposed in the WSI or detailed method statements, will also be subject to appropriate consultation and agreement. Prior to any stage of construction works commencing an appropriately qualified Archaeological Clerk of Works (ACoW) will be appointed by National Grid who will be responsible for ensuring the WSI is implemented.

3.5.4 All archaeological mitigation works will be managed in accordance with standard and guidance documents issued by the Chartered Institute for Archaeologists and best practice guidance notes issued by Historic England. These are listed in **Volume 5.11.2, Appendix 11A**.

Mere Bank Scheduled Monument

3.5.5 The DCO Order Limits and the Limits of Deviation for the G Route 132kV underground cables are within the designated area of the Mere Bank Scheduled

Monument. The contractor will be notified to ensure that an appropriate exclusion zone is maintained and that no works are undertaken on the ground which would directly and physically affect the area protected as a Scheduled Monument.

General Measures

3.5.6 The following general historic environment management measures from the WSI will be implemented during the construction of the Proposed Development:

a) locations and descriptions of all known heritage assets within and adjacent to construction works will be made available, including restrictions to construction methods to protect heritage assets, where these have been identified in the ES (**Volume 5.11.1**) and the WSI;

b) a programme will be prepared detailing the implementation of archaeological mitigation works prior to and during construction;

c) the archaeological mitigation programme will be incorporated into the overall construction programme;

d) during all stages of construction, an archaeological specialist will undertake the works specified as an appropriate mitigation measure (including purposive investigation and/or watching brief works); and

e) all archaeological mitigation recording, analysis, dissemination and archiving will be undertaken by a suitably qualified and demonstrably experienced organisation.

Archaeological Remains

3.5.7 Suitable measures and procedures will be agreed with the local planning authorities' archaeological representatives and/or Historic England, and will include the following as appropriate:

a) further field assessment of known heritage assets and areas of high archaeological potential. This will further characterise the archaeological remains so that the details of the proposed mitigation can be defined;

b) archaeological excavation of known heritage assets. This will enable a greater understanding of the character and extent of the archaeological remains and advance understanding of the significance of the heritage asset before it is lost;

c) archaeological controlled strip will be used to ensure the appropriate identification and treatment of archaeological remains during and immediately prior to construction;

d) an archaeological watching brief to ensure that any as yet undiscovered archaeological remains are appropriately identified and adequately recorded; and

e) provision for specialist palaeo-environmental and geo-archaeological recording during construction should any such deposits be encountered.

3.5.8 Throughout the works identified above consultation will be maintained with the relevant statutory bodies to agree a proportionate and appropriate strategy for

identified heritage assets. This will include the option of considering preservation in situ for assets with high heritage significance. Preservation in situ could be achieved by:

a) avoiding the heritage asset through a minor variation (within the Limits of Deviation) in the proposed working area;

b) using non-open cut techniques; and

c) protecting subsoil within the working area, for example, through the use of floating trackway panels, topsoil retention, or any other suitable technique.

3.5.9 Recordings will be undertaken of archaeological remains where preservation in situ is not warranted or achievable. Recordings will be undertaken by excavating each area of archaeological remains. Excavation will be undertaken in accordance with a risk assessment and method statement (RAMS) that takes account of the relevant research aims and is proportionate to the nature and level of the asset's significance and the extent of the loss of significance.

3.5.10 All archaeological work will be subject to an appropriate programme of post excavation assessment, analysis, review and publication, and to a proportionate programme of public outreach that is commensurate to the findings of the on-site archaeological mitigation recording works.

3.5.11 On completion of construction works, the temporary working areas will be reinstated pursuant to **Schedule 3, Requirement 15** of the DCO. Reinstatement measures will not include any intrusive activities in areas of known buried archaeology and where preservation in situ has been used. Any such areas will be identified on reinstatement plans. The reinstatement of archaeological earthworks such as ridge and furrow will follow the pre-construction contours unless otherwise agreed with the relevant local planning authority archaeological representative and/or Historic England.

Piling Risk Assessment

3.5.12 As detailed in Section 3.3 of this CEMP, boreholes will be drilled at each pylon location. The result of the borehole analysis will determine where piling will be required. Boreholes can contain geo-archaeological and palaeo-environmental evidence. A method for geo-archaeological and palaeo-environmental sampling and analysis is provided in the WSI (CEMP Appendix 4, **Volume 5.26.4C**) which identifies locations where borehole samples should also be obtained for archaeological analysis.

3.5.13 The Piling Risk Assessments will be cross referenced to the archaeological constraints plans at **Volume 5.26.4C, Figure 1** to identify where archaeological mitigation measures may also be required, or to identify areas where archaeological mitigation proposals may be constrained by potentially contaminated ground.

Human Remains

3.5.14 Requirements of the Burial Act 1857 will be followed should human remains be located during construction, either during archaeological works or as part of construction activity.

Treasure

3.5.15 Should artefacts be located during construction that are deemed by their material content or context to be treasure, as defined by the Treasure Act 1996, then all necessary measures to comply with the requirements of that Act will be implemented.

Historic Hedgerows

3.5.16 Historically significant hedgerows have been identified within the historic environment baseline data. During construction, archaeological recordings will be undertaken by the ACoW for any gaps made in historically significant hedgerows. This will be undertaken through watching brief conditions, to record in section the hedgerow profile and any associated structure or dating evidence.

Built Heritage

3.5.17 The contractors will be provided with the locations and descriptions of all known heritage assets within and adjacent to construction works, including restrictions to construction methods, to protect built heritage assets where necessary.

Inspections

3.5.18 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP and measures described in the WSI.

3.5.19 A specialist archaeological organisation will be appointed to implement the measures in the WSI. The ACoW will monitor all archaeological mitigation works. If there are any significant archaeological findings, these will be reported by the archaeological organisation to the ACoW. The ACoW will also maintain a log of the mitigation works undertaken and the results obtained, update the historic environment data on a regular basis and liaise with the relevant consultees in accordance with the overarching framework for delivery of the archaeological mitigation works provided in the WSI.

3.6 Traffic and Transport

Objective

3.6.1 To undertake the construction of the Proposed Development whilst minimising disruption to public travel and effects on the condition of the highways, a CTMP (**Volume 5.26.5C**) has been certified, to mitigate the potential effects of construction traffic on local communities and the environment. The CTMP (secured by **Schedule 3, Requirement 5** of the DCO) describes the mitigation measures that will be implemented during the construction of the Proposed Development, in accordance with **Schedule 3, Requirements 22 to 27** of the DCO, as appropriate.

Mitigation Measures

3.6.2 The measures that will be implemented through the CTMP include:

a) a Traffic Management Group (TMG) will be established, prior to construction, to implement and monitor the CTMP;

b) all HGV and LGV construction vehicles associated with the Proposed Development will be clearly identifiable through the use of a vehicle marking scheme (**Schedule 3, Requirement 24** of the DCO);

c) only those construction traffic routes and haul roads which have been agreed with the relevant authorities will be used;

d) Heavy Goods Vehicles (HGV) movements will be restricted during identified peak periods, particularly at certain junctions, as detailed in the CTMP and **Schedule 3, Requirement 23** of the DCO;

e) a 'Banksman' or other qualified personnel will be in place at all bellmouth locations to guide construction traffic; and record arrivals and departure of vehicles against the deliveries schedule;

f) all vehicles exiting from a bellmouth will pass over a wheel cleaning facility prior to using the public highway;

g) condition surveys will be conducted on the Local Road Network (LRN) (including haul roads and connections to the LRN), PRoW and cycle routes; and

h) Temporary Traffic Management Procedures (TTM) will be used where required to enhance safety conditions on the LRN and mitigate potential impacts of the construction of the bellmouths and haul roads.

3.6.3 Additional mitigation measures will be implemented for abnormal load movements, including, but not limited to:

a) escorts to warn other road users of the abnormal load vehicles;

b) delivery programmes timed to have minimal disruption; and

c) vehicles marked as abnormal or long vehicles and temporary warning signs.

Inspections

3.6.4 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP and measures described in the CTMP.

3.6.5 The TMG will ensure that the measures in the CTMP are implemented. Information packs will be provided to all contractors which will contain the details of the commitments in the CTMP.

3.7 Air Quality

Objective

3.7.1 To undertake the construction of the Proposed Development whilst minimising emissions of dust and other pollutants to avoid effects on air quality.

Regular Review

3.7.2 The air quality provisions of the CEMP will be reviewed on a regular basis, at least annually throughout the duration of the Proposed Development's construction period, to ensure that the mitigation measures proposed remain adequate, effective and reflect advances in best practice, including but not necessarily limited to the guidance published by the Institute of Air Quality Management (IAQM).

Mitigation Measures

Dust and Smoke

3.7.3 The following mitigation measures will be implemented to reduce the effect of dust and smoke from construction activities:

a) dusty materials, will be sheeted or prevented in some other way from becoming wind-borne;

b) wheel cleaning facilities will be provided and road sweeping will be undertaken in accordance with the CTMP (**Volume 5.26.5C**);

c) where activities could create dust clouds, dust suppression techniques will be adopted, for example water sprays and dampening of access roads. Suppression techniques will be used more frequently during periods of dry weather;

d) waste will be disposed of in accordance with the WMP (**Volume 5.26.2C**) and the SWMPs;

e) materials kept at site, including the stockpiling of soils, will be protected by appropriate measures, for example membranes, spraying or seeding;

f) loaded vehicles that are carrying dust generating materials will be covered, for example with sheets, when leaving site;

g) there will be no burning of materials on site;

h) all plant and vehicles will be maintained in good order so that they do not emit dark smoke, grit or dust;

i) the use of diesel generators will be minimised and battery powered generators will be used where available;

j) engines will be turned off when vehicles are not in use to avoid 'idling';

k) the site speed limit will be signposted and will not exceed 10mph;

l) alternative methods for business travel will be considered by all employees to reduce vehicle use; and

m) all working areas will be kept in a clean and tidy condition.

Odour

3.7.4 Covers will be put over items liable to emit odour. Odour monitoring will be undertaken in accordance with the EA's Horizontal Guidance on Odour H4 (Ref 1.10).

Inspections and Monitoring

3.7.5 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP.

3.7.6 Additionally, on site daily inspections of working areas and observation of work activities will be carried out by site supervisors, to include:

a) logging of any observed visible dust during work activities;

b) daily logged inspection of on-site areas, particularly surfaces (e.g. vehicles, any surfaces and vegetation) close to the boundary for deposited dust;

c) cleanliness of surfaced haul routes; and

d) general perceived effectiveness of mitigation.

3.7.7 Where visible dust is observed, or conditions likely to increase the risk of dust generation, for example prolonged dry weather prevail, mitigation may be increased, for example further dust suppression will be applied. This inspection regime will be included in the Construction Phase SHE Plan (see Section 2.2 of this CEMP), to be developed.

3.7.8 Daily or weekly inspections of representative off-site receptors will also be carried out, in the vicinity of active works, by site SHE advisors. Such receptors will be selected from 'clusters' of receptors, close to areas where high risk activities are taking place at that time. The inspections will comprise:

a) logging of any observed visible dust considered to be from site activity;

b) 'walk past' inspection of off-site areas, particularly surfaces, for deposited dust;

c) cleanliness of roads at and close to bellmouths; and

d) general perceived effectiveness of mitigation.

3.7.9 The frequency of such off-site inspection will be determined using the 'risk matrix' as set out in **Table 3.9.** This matrix compares the sensitivity (low to high/very high) of human and ecological receptors with the level of risk associated with specific activities, categorised as low to high. Both receptor sensitivity and activity risk are in accordance with **Volume 5.13.1, section 13.3**.

Table 3.9 Inspection Risk Assessment Matrix

Sensitivity of Receptors Present:	**Activity Risk**		
	Low	**Medium**	**High**
Low (Residential/ecological sites not present within 100m*)	No off-site inspection		
Medium (Residential/ecological	weekly	weekly	weekly

Sensitivity of Receptors Present:	Activity Risk		
	Low	Medium	High
sites present within 100m)			
High or Very High (Residential/ecological sites within 50/20m)	weekly	daily	daily

3.7.10 The presence and proximity of receptors for inspection purposes will be identified in advance of activities by SHE advisors with reference to mapping and information from the Ordnance Survey Address Base.

3.7.11 'High Risk' activities are likely to include: topsoil stripping for cable trenching or haul roads (large area); surfaced haul road construction (movement of vehicles over exposed soil, stone placement etc.); construction compound surfacing; excavation and reinstatement of cable trenches; and similar activities involving bulk movement of friable materials.

3.7.12 'Medium Risk' activities are likely to include: soil stripping for pylon foundations (with or without crane pad); construction of pylon foundations; removal of pylon foundations; excavation/construction of cable jointing bays; and horizontal directional drilling.

3.7.13 'Low Risk' activities are likely to include: aluminium sheeting or similar temporary access route construction; removal of conductors; and dismantling of steel pylons.

3.7.14 Records will be kept of air quality incidents and complaints in accordance with section 1.11 of this CEMP.

3.7.15 Stakeholder and community engagement and public information will be managed as set out in section 1.10 of this CEMP, including the display of contact details for members of the public to make complaints regarding dust and air quality.

3.8 Noise and Vibration

Objective

3.8.1 To undertake the construction of the Proposed Development whilst minimising noise and vibration on sensitive receptors.

Mitigation Measures

3.8.2 Works will be undertaken in accordance with the Noise and Statutory Nuisance Act 1992 and in accordance with British Standard for Noise and Vibration (Ref 1.11). The following measures will be implemented to reduce effects from noise and vibration from the construction activities of the Proposed Development; see also the accompanying Noise and Vibration Management Plan at **Volume 5.26.7B** which provides further information regarding mitigation:

a) Contractors will be required to submit Section 61 consents, variations and dispensations under the Control of Pollution Act 1974 for all construction activities that may generate a significant noise and/or vibration effect,

including piling and activities to be undertaken outside of core working hours, unless otherwise agreed with the relevant planning authority (see **Volume 5.26.7B, section 4** for further details).

b) Construction work will be undertaken in accordance with **Schedule 3, Requirement 7** of the DCO (construction hours).
c) Electrical items of plant will be used instead of diesel plant where possible particularly in sensitive locations.
d) Plant will be started up sequentially rather than all together.
e) Internal haul roads will be well maintained and avoid steep gradients where possible.
f) Loading/unloading activities will be located away from residential properties and shielded from those properties where practicable.
g) Drop heights of materials will be minimised.
h) The bunding (soil stockpiles) and fencing proposed at the construction compounds will be maintained to help to attenuate noise.
i) Continuous noisy plant will be housed in acoustic enclosures, where practicable.
j) Exhaust silencing and plant muffling equipment will be fitted and maintained in good working order.
k) Static plant known to generate significant levels of vibration will be fitted with vibration dampening features.
l) Each item of plant used will be selected so as to comply with the noise limits quoted in the relevant European Commission Directive 2000/14/EC/United Kingdom Statutory Instrument (SI) 2001/1701 (Ref. 4).
m) Consideration will be given to the recommendations set out in Annex B of Part 1 of BS 5228 noise sources, remedies and their effectiveness.
n) Equipment will be well-maintained and where possible will be used in the mode of operation that minimises noise.
o) Plant and equipment will be shut down when not in use.
p) Semi-static equipment will be sited and orientated as far as is reasonably practicable away from occupied buildings and, where feasible, will be fitted with suitable enclosures.
q) Mobile construction plant will be located, as far as is reasonably practicable, away from adjacent occupied buildings or as close as possible to noise barriers or site hoardings to provide additional screening from sensitive noise receptors.
r) Materials will be handled in a manner that minimises noise.
s) Vehicles will not wait or queue on the public highway with engines idling; construction traffic movements will be undertaken in accordance with the Construction Traffic Management Plan (CTMP) (**Volume 5.26.5C**).
t) All appropriate National Grid/WPD staff and their contractor's personnel will be instructed on BPM measures to reduce noise and vibration as part of their induction training, and followed up by 'tool box' talks.
u) Noisy activities will be staggered in time and space where feasible.
v) Only designated haul routes (on site) will be used.
w) A banksman will be used to avoid the use of reversing alarms wherever possible.
x) Reversing alarms will incorporate at least one of the following features: directional sounders; broadband signals; self-adjusting sounders; and/or flashing warning lights.

y) Where deemed appropriate (through risk assessment), physical barriers will be erected around activities that are expected to generate particularly high noise levels.
z) Cable cutting (undertaken as part of the cable transition jointing process) will be undertaken within core daytime working hours.

3.8.3 Noise insulation or a scheme to facilitate temporary rehousing will be provided should threshold levels be exceeded (see **Volume 5.26.7B, section 5** for further details).

3.8.4 In the event that a compliant of excessive vibration levels is received, a vibration monitoring exercise will be undertaken at impacted sensitive receptors. If the levels of vibration recorded are determined to exceed those stated in **Volume 5.26.7B, Table 6.1,** National Grid, WPD or their contractors will investigate the cause and cease the responsible activity until appropriate mitigation measures have been applied to prevent further exceedances.

3.8.5 In the event that complaints regarding noise and/or vibration are received, measurements will be undertaken either at the complainants' property or at a suitable known reference distance from the works so that any additional attenuation factors can be determined in accordance with the procedures in BS 5228 Part 1 and Part 2 (see **Volume 5.26.7B, section 7** for further details).

Inspections

3.8.6 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP.

3.8.7 Records will be kept of noise and vibration incidents and complaints in accordance with section 1.10 of this CEMP.

3.9 Socio-economics and Land Use

Objective

3.9.1 To undertake the construction of the Proposed Development whilst avoiding, minimising or compensating for the adverse effects and to enhance anticipated positive effects of the Proposed Development.

Mitigation and Enhancement Measures

3.9.2 Opportunities will be sought to maximise the procurement of materials and employees from within the South West in accordance with **Volume 8.29A**.

3.9.3 A SMP (as described at section 3.3 of this CEMP) will be prepared, which provides relevant guidance in relation to the reinstatement of agricultural land to maintain existing agricultural land quality.

3.9.4 A PRoW Management Plan (**Volume 5.26.6C**) will be implemented, as described at section 3.10 of this CEMP, which seeks to minimise the extent to which usage of PRoW is disrupted.

3.9.5 Consultation will be undertaken with the relevant authorities prior to each stage of construction commencing to identify and understand any constraints in the area that will need to be accounted for.

Inspections

3.9.6 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP.

3.10 Public Rights of Way

Objective

3.10.1 To undertake the construction of the Proposed Development whilst reducing effects on the PRoW network. A PRoW Management Plan is provided at **Volume 5.26.6C**. Mitigation measures described in the PRoW Management Plan are summarised in this section of the CEMP.

Mitigation Measures

PRoW General Management

3.10.2 All points where PRoWs cross the Proposed Development will have appropriate signage, which will advise of dates and hours of working. Management will involve the use of contract staff at those crossing points where and when construction works affect a PRoW. National Grid will inform the relevant PRoW officer at least seven days in advance of any short term closure and notify them when the closure has ceased. Advance notice will include dates of closure and the likelihood of the path being reopened the same day.

Temporary PRoW Closure and Temporary Diversion

3.10.3 Where a PRoW has been identified for a longer duration temporary closure, a temporary diversion will be established. Where temporary diversions are required these will be negotiated with the local PRoW officer and the landowners involved. Signage will be used confirming dates and hours of working. If it becomes necessary to implement an additional longer temporary closure or additional PRoW closure in the Order Limits to those identified in **Volume 5.26.6C, Table 2.2**, these will be discussed and agreed with the relevant local PRoW officer and the landowners involved prior to implementation

Signage

3.10.4 Signs will be erected warning PRoW users of construction work. Information signs detailing works will be maintained.

3.10.5 The location of signs providing information of temporary diversions and closures will be discussed with the PRoW Officers.

Safety Measures

3.10.6 Suitable fencing will be erected where appropriate to form a safe corridor for users of the PRoW.

Condition Surveys

3.10.7 Pre-commencement condition surveys will be undertaken of the PRoW prior to the commencement of construction. The surveys will include photographic records and written descriptions.

Reinstatement of PRoW

3.10.8 The directly affected PRoW will be reinstated as a minimum to the same condition as was recorded prior to the commencement of construction.

Inspections

3.10.9 Inspections and any action required, relating to non-conformance with the CEMP, will be undertaken in accordance with sections 1.12 and 1.13 of this CEMP. Inspections will be undertaken on the PRoW directly affected by construction and where the mitigation measures have been implemented, to ensure that all signage and fencing are still in place and that the condition of the PRoW is suitable for use by the public.

Ref 1.1 The Construction (Design and Management) Regulations, 2015

Ref 1.2 The Management of Health and Safety at Work Act 1999, Health and Safety Executive

Ref 1.3 Construction (Design and Management) Regulations 2015: Guidance on Regulations

Ref 1.4 The Waste (England and Wales) Regulations, 2011

Ref 1.5 Water Resources Act, 1991

Ref 1.6 Hazardous Waste Regulations, 2005

Ref 1.7 Waste Framework Directive, 2008

Ref 1.8 Environment Agency, Model Procedures for the Management of Contaminated Land, Contaminated Land Report Number 11 (CLR11), 2004a

Ref 1.9 Department for Environment Food and Rural Affairs (DEFRA), Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, 2009

Ref 1.10 Environment Agency, H4 Odour Management, 2011

Ref 1.11 British Standard 5228-1:2009+A1:2014, Code of Practice for Noise and Vibration Control on Construction and Open Sites Noise, 2009 (amended February 2014)

Annex A – Construction Compounds Schedule

Compound Name	Proposed Development Component	Compound Type	Drawing Reference(s) (see note 1)	Compound Area (sq m)	Approximate Plot Area Required (sq m)	Approximate Plot Area not Used (sq m)	Approximate Percentage of Land Used	Associated Works	Facilities	Estimated Duration
1: Bridgwater Tee (Bath Road)	Bridgwater Tee	Main Compound incl. Test	ES Volume 5.3.3.5 Figure 3.16.3	11500	20304.76	8804.76	57%	Main compound to facilitate the works associated with the Bridgwater Tee cable underground works.	- Offices - Welfare - Storage - Security	2-3 Years
2: A38 Bristol Road (underground cables)	400kV underground cables	Main Compound	ES Volume 5.3.3.5 Figure 3.16.1 MMD-322069-C-SK-400UG-XX-0002	11596	18252.85	6656.85	64%	Main compound to facilitate the 400kV Menip underground works.	- Offices - Welfare - Storage - Security	4 Years
3: A38 Bristol Road (overhead lines)	400kV overhead lines	Main Compound	ES Volume 5.3.3.5 Figure 3.16.1 MMD-322069-C-SK-400UG-XX-0002	11904	19557.12	7653.12	61%	Main compound to facilitate the 400kV OHL works.	- Offices - Welfare - Storage - Security	2.25 Years
4: South of the Mendip Hills (Hams Lane) Loxton	400kV underground cables	Satellite Compound	ES Volume 5.3.3.5 Figure 3.16.2 MMD-322069-C-SK-400UG--XX-0003	14690	28776.06	14086.06	51%	Compound to facilitate the construction of the Cable Sealing End Compound (CSEC). Compound is will also be used for the works associated crossing of the River Axe (Bridge/HDD) and Old Lox Yeo (HDD). Area will also be used to store a number of OHL T-Pylons.	- Offices - Welfare - Storage - Security	4 Years
5: Barton Road	400kV underground cables	Satellite Compound	ES Volume 5.3.3.5 Figure 3.16.2 MMD-322069-C-SK-400UG-XX-0007	8338	20108.89	11770.89	41%	Compound will be used for the works associated with the Webbington road crossing and Lox Yeo crossing (HDD).	- Welfare - Storage - Security	3-4 Years
6: Castle Hill	400kV underground cables	Satellite Compound	ES Volume 5.3.3.5 Figure 3.16.2 MMD-322069-C-SK-400UG-XX-0006	8338	14921.57	6583.57	56%	Compound will be used for the works associated with the Max Mill Lane and Castle Hill road crossings.	- Welfare - Storage - Security	3-4 Years
7: Towerhead Road	400kV underground cables	Satellite Compound	ES Volume 5.3.3.5 Figure 3.16.2	6545	12872.71	6327.71	51%	Compound will be temporary until Sandford Construction Compound is complete. The compound will be used for the works associated with Towerhead Road crossing, installation of the haul road up to Sandford and the crossing of Towerhead Brook (Bridge).	- Welfare - Storage - Security	12 Months
8: Sandford Substation	Sandford	Main Compound incl. Test Substation Compound	ES Volume 5.3.3.5 Figure 3.16.3 MMD-322069-C-SK-400UG-XX-0004	25301	39576.13	14275.13	64%	Main compound to facilitate the works associated with the Northern section of the 400kV Mendip cable underground works. Main compound to facilate the works associated with the Sandford Substation construction works.	- Offices - Welfare - Storage - Security	4 Years
9: AT Route	AT Route	Main Compound incl. Test OHL Main Compound	ES Volume 5.3.3.5 Figure 3.16.6 MMD-322069-C-SK-AT-Rt-XX-0001	9118	11767.89	2649.89	77%	Main compound to facilitate the works associated with the AT undergrounding works. Main compound to facilitate the works associated with the AT OHL works.	- Offices - Welfare - Storage - Security	6 Months
10: Churchill	Churchill	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	3025	7942.83	4917.83	38%	Compound to facilitate the works associated with the Y-Route undergrounding works.	- Offices - Welfare - Storage - Security	18 Months
11: Engine Lane	W Route underground cables	Main Compound incl. Test	ES Volume 5.3.3.5 Figure 3.16.6	7225	10175.35	2950.35	71%	Main compound to facilitate the works associated with the W-Route undergrounding works.	- Offices - Welfare - Storage - Security	18 Months – 2 Years
12: Nailsea	W Route	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	3025	13135	10110	23%	Compound will be used to facilitate the works associated with the SSSI ditch crossings (HDD).	- Welfare - Storage - Security	12 Months
13: Church lane	W Route	Main Compound	ES Volume 5.3.3.5 Figure 3.16.4	6375	7776.14	1401.14	82%	Compound will be used to facilitate the works associated with the Church Lane and Clevedon Road crossings and the crossing of the Land Yeo. This compound will also support the works north towards Tickenham Ridge.	- Offices - Welfare - Storage - Security	12 Months
14: Clevedon Road	W Route underground cables	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	692	2764.32	2072.32	25%	Compound will be used to facilitate the works associated with Clevedon Road crossing (HDD).	- Welfare - Storage - Security	6 Months
15: Whitehouse Lane	W Route underground cables	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	3025	8232.79	5207.79	37%	Compound will be used to facilitate the works associated with Cadbury Camp Land and Whitehouse Lane road crossings (HDD).	- Welfare - Storage - Security	6 Months
16:Caswell Hill	W Route	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	3025	8354.71	5329.71	36%	Compound will be used to facilitate the works associated with the M5 crossing (possible HDD) whilst will also be used for the works taking place down Tickenham Ridge.	- Welfare - Storage - Security	12 Months
17: Sheepway	W Route	Main Compound	ES Volume 5.3.3.5 Figure 3.16.4	6375	8898.82	2523.82	72%	Main compound to facilitate the works associated with the northern section of the W-Route. The compound will be used to facilitate the works associated with the Portbury Hundred and Sheepway/Railway crossings (HDDs). Whilst the compound will also be used with the anticipated HDD works into Portishead Substation.	- Offices - Welfare - Storage - Security	12 Months

18: BW Route (west)	BW Route	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	3025	6222.39	3197.39	49%	Compound to facilitate the works associated with the BW (Port) Route undergrounding works.	- Offices - Welfare - Storage - Security	12 Months
19: BW Route (east)	BW Route	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	3025	4953.31	1928.31	61%	Compound to facilitate the works associated with the BW (Avon) Route undergrounding works.	- Offices - Welfare - Storage - Security	9-12 Months
20: St Andrews Road	400kV overhead lines	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	3025	5833.61	2808.61	52%		- Offices - Welfare - Storage - Security	3 Years
21: Kings Weston Lane	G Route	Satellite	ES Volume 5.3.3.5 Figure 3.16.5	3025	3184.3	159.3	95%	Compound to facilitate the works associated with King Weston road crossing (HDD) including the works to connecting into Avonmouth Substation.	- Welfare - Storage - Security	12 Months
~~22: G Route (east of M49)~~	~~G Route underground cables~~	~~Main Compound~~	~~ES Volume 5.3.3.5 Figure 3.16.4~~	~~6375~~	~~11774.7~~	~~5399.7~~	~~54%~~	~~Main Compound to facilitate the works associated with the G Route undergrounding works.~~	~~- Offices - Welfare - Storage - Security~~	~~12 Months~~
23: Seabank (Severn Road)	Seabank	Main Compound	ES Volume 5.3.3.5 Figure 3.16.4	6375	12389.78	6014.78	51%	Main Compound to facilitate the works associated with the Seabank connection works.	- Offices - Welfare - Storage - Security	3-4 Years

Notes

1. Compound size and shape will vary on site to accommodate existing site conditions and field boundaries.

Annex B – National Grid's Environmental Policy

nationalgrid

Environment Policy

We want to be a recognised leader in the development and operation of safe, reliable and sustainable energy infrastructure to meet the needs of our customers and communities and to generate value for our investors.

One of the ways we will achieve this is to protect and enhance the environment, always seeking new and innovative ways to lighten the environmental impact of our past, present and future activities.

Steve Holliday
Chief Executive

We commit to:

- Preventing pollution
- Complying with environmental, legal and other obligations
- Continually improving our environmental management systems
- Ensuring employees have the competency and equipment to meet our environmental commitments
- Ensuring those working on our behalf demonstrate the same commitment to the environment as we do
- Transparently share environmental progress and performance
- Actively manage any risks associated with our past operational contamination
- Using resources more efficiently
- Protecting the ecosystems and biodiversity of our workplaces
- Reducing greenhouse gas emissions: 45% by 2020 and 80% by 2050
- Adapting to the effects of climate change
- Helping stakeholders develop more effective environmental policies and targets
- Helping consumers access more sustainable energy
- Integrating environmental sustainability into our decision making
- Driving more environmental sustainable programmes and activities.

September 2013

For more details on this policy, visit the SSR Infonet homepage or nationalgrid.com

Environment Policy 2013

Objective

We want to be a recognised leader in the development and operation of safe, reliable and sustainable energy infrastructure to meet the needs of our customers and communities and to generate value for our investors.

Investing in, and operating, a safe and reliable gas and electricity infrastructure uses energy and raw materials, and produces waste. Our effect on the environment and the communities we serve depends on how we and our supply chain operate. Our goal is to comply with regulations, reduce any impact that we may have, seek out opportunities to improve the environment and integrate sustainability in our decision making.

We will face these challenges by deploying best practice throughout our operations and by engaging on national and international energy issues and by supporting renewable energy targets. We will show leadership by working with our customers, regulators, suppliers and others to deliver a more sustainable future. We will use our environmental management systems and innovation to continually improve our performance.

Protection of the environment is a legal requirement in all areas of National Grid's operations as well as a significant component of our reputation as a responsible business. The services provided by National Grid can help to improve the environment and therefore provide an opportunity for our company.

This policy provides a framework for managing the environmental aspects of National Grid's businesses. It helps to set goals to promote continual improvements in environmental performance and is intended to help to focus the organisation on addressing the most important environmental issues and opportunities.

Scope

This policy applies to all businesses within National Grid. For Associate Companies, National Grid will promote the adoption of policies consistent with the principles set out in this document.

The policy statement takes account of the wide range of environmental legislation under which all businesses and Associate Companies operate. It also takes account of the standards set under ISO 14001 for environmental management systems.

Further explanation of each of the commitments described in this document can be found on National Grid's web site. The web site, and associated intranet, will be used to create layers of information that will form a clear line of sight from this policy document to our day to day activities. This will enable all employees to understand the contribution that they make to delivery of the policy. Where appropriate, our policy commitments will be turned into targets and key performance indicators that can be used to track and report progress.

Policy framework

National Grid is committed to the protection and enhancement of the environment, always seeking new and innovative ways to lighten the environmental impact of our past, present and future activities.

The following commitments provide a framework to help us to set goals to promote continual improvements in environmental performance and to deliver and maintain a culture that achieves the performance to which we aspire.

We believe that everyone is responsible for good environmental performance. In particular:

- The board has overall responsibility for protecting the environment by setting objectives for our operations, and ensuring that environmental matters are integral to the way in which we manage our business;
- Management provides visible leadership that promotes good environmental performance and commits the appropriate resources to achieve our environmental goals; and
- We are all responsible for ensuring that our actions and behaviours protect the environment. Our activities are connected and create a culture whereby people carry out their daily work activities and have a respect for the environment that they can take beyond National Grid.

Our commitments

- We will continually improve our management systems to prevent pollution, reduce the risk of environmental incidents and comply with environmental law, policies, charters and other commitments to which we subscribe.
- We will ensure that our employees have the training, skills, knowledge and resources necessary to meet our environmental commitments.

- We will require those working on behalf of National Grid to demonstrate at least the same level of commitment to stewardship of the environment and will create an environment where best practice can be shared.
- We will transparently share our performance with employees, members of the public and others and give them a meaningful opportunity to comment on our performance.
- We will actively manage the risks associated with sites where we have responsibility for dealing with contamination associated with past operations.
- We will look for ways to use resources more efficiently through good design, use of sustainable materials, responsibly refurbishing existing assets, and reducing and recycling waste.
- We will respect the environmental status and biodiversity of the places we work, aiming to enhance areas for the benefit of local communities or the natural environment.
- We will reduce the impact of our business on global climate change targeting a decrease in our emissions of greenhouse gases by 45% by 2020 and 80% by 2050.
- We will look at ways to reduce the impact of climate change on our business by implementing mitigation and adaptation measures.
- We will work with governments and regulators to help them develop and deliver more effective environmental policies and targets.
- We will help consumers reduce their dependency on fossil fuels by providing them with access to more sustainable energy and through innovative energy efficiency programmes.
- We will ensure that environmental sustainability is integrated into our decision making.
- We will ensure that environmental sustainable programmes and activities are driven within the business.

In support of this policy statement, each business within National Grid will ensure that:

- All elements of this policy statement of relevance to its business are implemented;
- All regulatory and legal requirements are met; and
- All breaches, suspected breaches and areas of vulnerability to prosecution are investigated and, if appropriate, prompt corrective action taken.
- Associated Companies will be encouraged to put the above arrangements in place.

Related policies and other documents

- ISO 14001 certifications in the UK and the US
- Stakeholder, Community and Amenity Policy for UK transmission business
- Public position statement on electric and magnetic fields
- Terms of reference for the Safety, Environment and Health committee

Key contacts

This policy is owned and maintained by the Safety, Sustainability and Resilience Director, to whom questions regarding its content and application should be addressed.

The Corporate Affairs Director will be responsible for facilitating communication of this policy throughout the organisation.

Monitoring compliance

The Safety, Sustainability and Resilience Director will review compliance with this policy on a bi-annual basis. Any changes needed to ensure its effectiveness will be drawn to the attention of the executive, board, and Safety, Environment and Health committee.

Each business within National Grid will ensure that it has the necessary arrangements in place to monitor and report compliance against this policy on a bi-annual basis. Each Associate Company will be encouraged to put in place similar arrangements to enable compliance to be reported on an annual basis.

Definitions

ISO 14001: The International Standard for environmental management systems. The achievement and subsequent maintenance of certification of an environmental management system to this standard is dependent in part on this policy.

Associated Company: A company where between 20% and 50% of the equity share capital is beneficially owned by a National Grid company or companies.

National Grid's commitments when undertaking works in the UK

Our stakeholder, community and amenity policy

nationalgrid

The power of action.℠

This note sets out National Grid's ten commitments when undertaking electricity and gas works in the UK. It covers how we will meet our amenity responsibilities and our commitments to effectively involving stakeholders and communities.

Engaging stakeholders and communities

The development of gas and electricity networks, and their maintenance and refurbishment, can affect communities through which the networks pass. How we manage our relationships and work together with these communities and other affected stakeholders is important to us.

National Grid aspires to engage positively with stakeholders and communities. We are committed to involving stakeholders and communities effectively in our works and recognise the benefits of doing this. We will listen, take into account views and opinions expressed and respond to these when developing and undertaking works.

The principles contained in our Commitment 2 (Involving stakeholders and communities) provide the framework that will help us to promote genuine and meaningful stakeholder and community engagement and to develop and maintain a culture that delivers this.

Application

This document applies to National Grid's transmission activities in the UK, for both electricity and gas works. It also applies to all works on our gas distribution network operating above 7 bar (gauge) pressure. Gas works for networks of below 7 bar in pressure are excluded from these commitments because they are of much smaller scale, tend to be undertaken in the public highway and are controlled under the provisions of the New Roads and Street Works Act 1991 and Traffic Management Act 2004. They are also planned and implemented in much shorter timescales resulting in short-term impacts which are generally less significant and restricted to the communities in the immediate vicinity of the works.

In this document, we interpret **amenity** to mean the natural environment, cultural heritage, landscape and visual quality. We also include within this interpretation the impact of our works on communities, such as the effects of noise and disturbance from construction activities.

By **works** we mean constructing new transmission or distribution infrastructure such as overhead lines, underground cables, sealing end compounds and substations; pipelines, compressor stations, pressure reduction installations and other above ground gas installations (where all are part of networks operating above 7 bar (gauge) pressure); major refurbishment of any of these; and the dismantling and removal of any parts of the system.

By **stakeholders** we mean organisations and individuals who can affect or are affected by our works. By **communities** we include those stakeholders (organisations and individuals including residents) with a particular remit or interest in the local area affected by the works.

Before
Construction of one of two new gas pipelines through the south west.

After
Careful reinstatement of the land upon completion of the groundwork.

Location: Gas pipeline reinforcement at Milford Haven to Aberdulais.

A reinstatement to a road crossing on the route of The South West Reinforcement Project. The breach was repaired using traditional Devon Banks methods.

Our Commitments

We, at National Grid, have made ten commitments to underpin our aspirations to engage positively with stakeholders and communities and to meet our amenity responsibilities when undertaking electricity and gas works.

1. Establishing need

We will only seek to build electricity lines or pipelines along new routes, or above ground installations in new locations, where our existing infrastructure cannot be technically or economically upgraded to meet system security standards and regulatory obligations, where forecasted increases in demand for electricity or gas will not be satisfied by other means, or where connections to customers are required.

2. Involving stakeholders and communities

We will promote genuine and meaningful stakeholder and community engagement. We will meet and, where appropriate, exceed the statutory requirements for consultation or engagement.

We will adopt the following principles to help us meet this commitment:

- we will seek to identify and understand the views and opinions of all the stakeholders and communities who may be affected by our works
- we will provide opportunities for engagement from the early stages of the process, where options and alternatives are being considered and there is the greatest scope to influence the design of the works
- we will endeavour to enable constructive debate to take place, creating open and two-way communication processes
- we will ensure that benefits, constraints and adverse impacts of proposed works are communicated openly for meaningful stakeholder and community comment and discussion. We will be clear about any aspects of the works that cannot be altered
- we will utilise appropriate methods and effort in engaging stakeholders and communities, proportionate to the scale and impact of the works
- we will provide feedback on how views expressed have been considered and the outcomes of any engagement process or activity

3. Routeing of networks and site selection

If new infrastructure is required, we will seek to avoid the following areas which are nationally or internationally designated for their landscape, wildlife or cultural significance: National Parks; Areas of Outstanding Natural Beauty; National Scenic Areas; Heritage Coasts; World Heritage Sites; Sites of Special Scientific Interest; Special Protection Areas; Special Areas of Conservation; Ramsar sites; National Nature Reserves; Scheduled Ancient Monuments; and registered parks and gardens.

4. Minimising the effects of new infrastructure

We will seek to minimise the effects of works and new infrastructure on communities by having particular regard to safety, noise and construction traffic. We will also seek to minimise the effects of new infrastructure on areas which are nationally or internationally designated for their landscape, wildlife or cultural significance and other sites valued for their amenity such as listed buildings, conservation areas, areas of archaeological interest, local wildlife sites, historic parks and gardens and historic battlefields. We will take into account the significance of these and other areas through consultation with local authorities and other stakeholders with particular interests in such sites.

5. Mitigating adverse effects of works

We will undertake relevant environmental investigations and report on these in any applications for consent for new works. We will use best practice environmental impact assessment techniques to assess possible effects of our works and identify opportunities for mitigation measures. In the course of this we will consult with relevant stakeholders and affected landowners. Where works are likely to have an adverse effect on amenity, we will carry out mitigation measures to reduce those effects as far as reasonably practicable.

6. Offsetting where mitigation is not practicable

Where mitigation measures cannot adequately mitigate against loss of amenity, or where mitigation is not practicable, we will offer to undertake practical offsetting measures. These measures, which will be developed in discussion with relevant stakeholders, could include landscaping and planting works or other benefits to affected communities.

7. Enhancing the environment around our works

When undertaking works, we will consider what practicable measures can be taken to enhance areas in the vicinity of the works for the benefit of local communities and the natural environment.

8. Monitoring and learning for the future

We will monitor, evaluate and review our engagement processes so that we can learn from our experiences and continue to improve engagement programmes in the future. We will carry out periodic reviews of the environmental impact of our works and consider the effectiveness of our assessment and any mitigation we have undertaken. The results of these reviews will be used to foster continuous improvement in the environmental assessment and management of works. In undertaking all reviews of our processes and procedures we will take into account stakeholder and community feedback.

9. Reviewing these commitments

We intend to review these commitments at least every five years. Additional revisions will be made as necessary in response to new legislation, policy and guidance. As a responsible company practising good corporate governance, we will review the relevance of these commitments and report on our web site case studies illustrating our stakeholder and community engagement and our performance in preserving amenity.

10. Working with others

We require others undertaking works on our behalf to demonstrate these same commitments and we will create an environment where best practice can be shared and delivered.

Background

Meeting our duties under Schedule 9 of the Electricity Act

Electricity Act 1989
Extracts from Schedule 9
Preservation of amenity: England and Wales
Paragraph 1(1)
1.-(1) In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate or supply electricity-
(a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and
(b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.

Paragraph 2(1)
A licence holder shall within twelve months from the grant of his licence prepare, and from time to time modify, a statement setting out the manner in which he proposes to perform his duty under paragraph 1(1) above, including in particular the consultation procedures.

This document sets out how National Grid, as an electricity transmission system licence holder, will meet the duty placed on it under Section 38 and Schedule 9 of the Electricity Act 1989 (see above). This duty relates to the preservation of amenity and forms only part of National Grid's wider environmental responsibilities. Information on those environmental issues not formally covered by Schedule 9, such as our role in countering climate change, in connecting new and renewable sources of electricity generation, in pollution control, and in electric and magnetic fields is available in other publications.

There is no equivalent to a Schedule 9 statement requirement in the provisions of the Gas Act 1986. However, National Grid believes that the principles in this document should apply equally to both our electricity and gas transmission and gas distribution works above 7 bar in pressure.

History

The first significant revision to our Schedule 9 Statement was prepared following a stakeholder workshop facilitated by the Environment Council in 2001. The statement and our performance in meeting the commitments were reviewed in 2006 and our statement was modified slightly as a result. In preparing that revision we consulted the bodies referred to in Schedule 9 of the Act which have statutory responsibilities for amenity, namely: Natural England; Countryside Council for Wales; CADW: Welsh Historic Monuments; and English Heritage. In addition, we consulted other non-government organisations concerned with amenity such as: Civic Trust; Council for National Parks (now the Campaign for National Parks); Tree Council; Wildlife Trusts; RSPB; CPRE; and representatives of other stakeholder groups together with our staff.

Preparing this policy

With the advent of the Planning Act 2008, we have incorporated our Schedule 9 statement duty into this wider policy, which incorporates gas works (above 7 bar in pressure), and new commitments to stakeholder and community engagement. In preparing our stakeholder and community engagement commitments we commissioned work from the consultancies, Corven and Entec UK, utilised best practice from 3G Communications Ltd., and met with a number of non-government organisations.

We are keen to hear your views on this policy comments should be sent to:
landd.consultation@uk.ngrid.com

Land and Development
Stakeholder and Policy Manager
National Grid
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

nationalgrid.com

Published: February 2010

Land and Development
Stakeholder and Policy Manager
National Grid
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

nationalgrid.com

nationalgrid
The power of action.℠

Annex C – Western Power Distribution’s Environmental Policy

WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

WESTERN POWER DISTRIBUTION
(South West plc; South Wales plc, Midlands East plc and Midlands West plc)

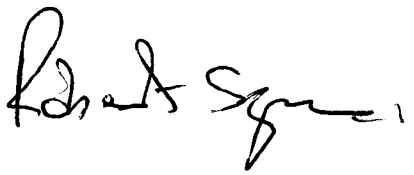
ENVIRONMENTAL POLICY STATEMENT

Western Power Distribution (WPD) is an essential part of everyday life in South Wales, South West England and the East, West and North Midlands; regions of the UK well known for dramatic coastline, national parks, scenic countryside and industrial heritage.
This Policy Statement is reviewed annually or following business and legislative changes as required.

Our policy for the environment
We are committed to ensuring compliance with environmental legislation, minimising all aspects of pollution to the environment and ensuring continual improvement in environmental management throughout all aspects our organisation.
In line with our commitment to environmental improvement and sustainability we have set a number of challenging environmental targets based on the significant environmental aspects of our operating activities, namely;

- Using energy efficiently and reducing the CO_2 footprint of our offices and depots
- Reduce the average CO_2 emissions of WPD fleet vehicles
- Installation of renewable generation on all new buildings (photovoltaic cells, wind turbines)
- Liaise with local communities and interest groups to mitigate the impact of our works on the environment. Support a large number of schools in wildlife projects.
- Accurately measure our annual carbon footprint
- Increase the use of recycled and stabilised materials in excavation works.
- Reduce the amount of waste generated and reduce the amount of waste disposed of to landfill
- Where viable, lay underground lines in sensitive locations to improve the appearance of the countryside or towns.
- Engage with our suppliers and contractors to ensure environmental standards are upheld throughout our supply chain

To meet the goals which WPD have established, a number of corresponding targets have been set, as described in ST EN1A.

Signed  **Position** **Chief Executive**
Western Power Distribution

Date 8/1/2014

WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

WESTERN POWER DISTRIBUTION
(South West plc; South Wales plc, Midlands East plc and Midlands West plc)

ENVIRONMENTAL POLICY STATEMENT

Western Power Distribution (WPD) is an essential part of everyday life in South Wales, South West England and the East, West and North Midlands; regions of the UK well known for dramatic coastline, national parks, scenic countryside and industrial heritage.
This Policy Statement is reviewed annually or following business and legislative changes as required.

Our policy for the environment
We are committed to ensuring compliance with environmental legislation, minimising all aspects of pollution to the environment and ensuring continual improvement in environmental management throughout all aspects our organisation.
In line with our commitment to environmental improvement and sustainability we have set a number of challenging environmental targets based on the significant environmental aspects of our operating activities, namely;

- Using energy efficiently and reducing the CO_2 footprint of our offices and depots
- Reduce the average CO_2 emissions of WPD fleet vehicles
- Installation of renewable generation on all new buildings (photovoltaic cells, wind turbines)
- Liaise with local communities and interest groups to mitigate the impact of our works on the environment. Support a large number of schools in wildlife projects.
- Accurately measure our annual carbon footprint
- Increase the use of recycled and stabilised materials in excavation works.
- Reduce the amount of waste generated and reduce the amount of waste disposed of to landfill
- Where viable, lay underground lines in sensitive locations to improve the appearance of the countryside or towns.
- Engage with our suppliers and contractors to ensure environmental standards are upheld throughout our supply chain

To meet the goals which WPD have established, a number of corresponding targets have been set, as described in ST EN1A.

Signed RAC **Position** **Chief Executive**
Western Power Distribution

Date 8 January 2013