

National Grid

Cotswolds VIP –
Whittington Cable Sealing
End Compound
Preliminary Landscape and
Ecological Management
Plan

Final report





National Grid

Cotswolds VIP – Whittington Cable Sealing End Compound

Preliminary Landscape and Ecological Management Plan

Project Number 12508

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Contents

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

Contents

Chapter 1	1	Public Right of Way	19
Introduction		Chapter 7	
Scope	1	Outline Maintenance Schedule	20
Site Context	1	Outilite Maintenance Generale	20
Proposed Project Description	1		
Structure of the LEMP	3	Chapter 8	
		Monitoring and Review	22
Chapter 2			
Landscape and Ecological Baseline	4	Appendix A	
		Landscape Proposals	A-24
Ecology Baseline	4		
Landscape Baseline	7		
Chapter 3			
Landscape and Ecological Aims	9		
Purpose of the LEMP	9		
Biodiversity/Ecology Strategy	9		
Landscape Strategy	10		
Chapter 4			
Responsibilities	11		
Chapter 5			
Landscape and Ecological Management			
during Construction	12		
Construction Environment Management Plan	12		
Construction Management Objectives	12		
Construction Management Prescriptions	13		
Chapter 6			
Landscape and Ecological Management			
during Operation	15		
Existing Hedgerows	16		
Existing Trees	16		
New Hedgerows	16		
New Woodland/Scrub Planting	17		
New Trees	17		
Grassland	18		

Introduction

Scope

- 1.1 This Landscape and Ecological Management Plan (LEMP) has been prepared by LUC and Arcadis, on behalf of National Grid in relation to the Cotswolds Visual Impact Provision (VIP) Project. The LEMP has been produced in support of the planning application for the Whittington Cable Sealing End Compound (CSEC) and its associated permanent access (the application site) which is associated with the removal of existing 400kV overhead lines and the installation of underground cables within the Cotswolds National Landscape (previously known as an Area of Outstanding Natural Beauty (AONB)).
- 1.2 The purpose of this LEMP is to set out habitat creation and protection measures, as well as to outline the management and monitoring required to deliver landscape and ecological enhancements in the long term. The LEMP has been designed to improve and maximise the landscape and ecological value of the application site.
- **1.3** Landscape drawings have been included in Appendix A. These set out the principles of the existing and proposed areas of planting within the site.
- **1.4** The LEMP draws upon the findings and recommendations detailed in the following reports:
 - Landscape and Visual Appraisal by LUC, 2024;
 - Arboricultural Survey Report by Arcadis, 2024;
 - Arboricultural Impact Assessment by Arcadis, 2024;
 - Ecological Impact Assessment by Arcadis, 2024; and
 - Biodiversity Net Gain (BNG) Report by Arcadis, 2024.

Site Context

1.5 The application site is located wholly within the CNL broadly located to the east of Cheltenham. The site comprises a discrete area adjacent to Ham Road and three bellmouths.

Proposed Project Description

1.6 The Proposed Project forms part of the wider Cotswolds VIP Project (hereafter referred to as the 'wider project'), the purpose of which is to underground a section of 400kV overhead electricity transmission lines, to mitigate the visual impact of existing electricity infrastructure through part of the

Chapter 1 Introduction

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

CNL. The wider project is located immediately south of the B4632 and from Breakheart Plantation, runs in a south-westerly direction to the east of Cleeve Common Site of Special Scientific Interest (SSSI), past Wontley, Drypool and Wood Farms, towards Dowdeswell Wood.

- **1.7** The wider project will comprise:
 - The removal of a section of overhead lines (OHL), including the permanent removal of 16 pylons (18 pylons will be removed in total, however, two will be replaced under Permitted Development).
- Underground cabling of approximately 7km in length.
- Two new cable sealing end compounds (CSECs) at each end (north and south) and associated replacement terminal pylons (as mentioned above), to connect the new underground cables to the remaining existing overhead line.
- Associated temporary works to facilitate construction, including temporary/permanent access junctions and roads, a temporary haul road, construction compounds, material storage and welfare facilities.
- Ancillary off-site infrastructure (including installation of arcing horns and shunt reactor installation/connection).
- 1.8 The majority of the works will be undertaken using Permitted Development rights under Schedule 2 of the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended), however, the CSECs require planning permission. The scope of this report is for the Whittington CSEC only (hereafter referred to as the 'Proposed Project').
- 1.9 The Proposed Project is for the construction of a CSEC at Whittington to facilitate the connection between new underground cables and the existing OHL and the associated permanent access road (and bell-mouth) to the CSEC, in addition to two temporary bell-mouths created to support the cable construction along classified roads. The Proposed Project is located within Cotswold District.
- **1.10** The proposed works within the Whittington CSEC redline comprise:
 - CSEC infrastructure;
 - Underground cabling from the Whittington CSEC towards the Winchcombe CSEC (note: this is Permitted Development);
 - A permanent access road to the CSEC, including a bellmouth with Ham Road and a turning area;
- A hardstanding area where the overhead line meets with the new underground cables;

- New screening comprising native trees, woodland and scrub planting; and
- Three temporary bell-mouths on classified roads to facilitate construction.
- **1.11** The terminal pylon for the Whittington CSEC is located outside the CSEC redline (and is Permitted Development).
- 1.12 The LEMP relates to the management of land associated with the CSEC and its associated access road only (the application site) and not the removal of the 400kV overhead line and installation of underground cables. Other works associated with the 400kV overhead line and installation of underground cables are recognised as permitted development.
- **1.13** The key elements of the proposed project covered by the LEMP are the CSEC to the south of Ham Road and a permanent access off this road. Temporary bellmouths are also included as part of the LEMP, however, there are no details available at the time of production of the report.
- **1.14** The LEMP excludes all management of land outside the boundaries of the CSEC with the extents of management shown on **Figure 1.1** below and on the plans within Appendix A

Figure 1.1: Planning Application Boundary









Structure of the LEMP

- 1.15 The LEMP is structured as follows:
- Chapter 2 Landscape and Ecological Baseline;
- Chapter 3 Landscape and Ecological Aims;
- Chapter 4 Responsibilities;
- Chapter 5 Landscape and Ecological Management during Construction;
- Chapter 6 Landscape and Ecological Management during Operation;
- Chapter 7 Outline Maintenance Schedule; and
- Chapter 8 Monitoring and Review.

Landscape and Ecological Baseline

Ecology Baseline

2.1 The CSEC is located within the CNL (previously an AONB). The Cotswolds Nature Recovery Plan¹ has the following relevant policies.

2.2 Policy 4.1.2 Habitats, states:

'Habitat management, restoration and creation is undertaken in accordance with the Lawton principles of more, bigger, better and joined. Practitioners consider how wildlife moves around and how their work contributes to a wider nature recovery network at all scales from individual sites to whole landscapes.

Irrespective of the habitats being managed or restored, marginal habitats are included. Woodland edge, scrub in grasslands, and water's edge can all be particularly valuable.

'Scruffy' habitats are not only tolerated but valued for the variety of wildlife they house.

The distinction between woodland, scrub, and grassland is blurred through the creation of new extensively grazed dynamic habitat mosaics.

The creation of new woods extends and connects woodland habitats whilst avoiding replacing other important habitats particularly flower rich grasslands. Sites where new woodland creation would damage the potential for improving connectivity between existing flower rich grasslands or sensitive species such as corn bunting are also avoided.'

2.3 Policy 4.1.3 Species states:

'There is a focus on the management of habitats to achieve the best outcomes for nature recovery, and individual measures for important species and species assemblages are integrated into this...

...Indicator species are the tools that measure and explain ecological recovery in a way that is meaningful to the public and all stakeholders. Expansion in species' range and abundance are the tangible proof of nature's

¹ Cotswolds National Landscape (2021) Cotswolds Nature Recovery Plan (Cotswolds-Nature-Recovery-Plan-Full-Version.pdf (cotswolds-nl.org.uk))

Landscape and Ecological Baseline

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

recovery. Expansions in range and abundance are simple measures accessible to all...'

2.4 Policy 4.2.1 Priority Habitats states:

'Highest priority

Habitats within the Cotswolds where their extent is recognised as being of international importance for example through the designation of Special Areas of Conservation.

- Veteran trees for their deadwood invertebrates.
- Ancient woodlands, particularly the beech woods, for their exceptional flora and the restoration of ancient woodland from plantations on ancient woodland sites.
- Ancient, unimproved, limestone grassland for its exceptional flora and invertebrate assemblages.

High priority

Habitats or components of habitats where the Cotswolds extent is recognised as being of national importance.

- Woodland edge and/or scrub ecotone, hedgerows and hedgerow and field trees for their resident species and/or species that use them for migration or overwintering.
- 'Long-established woodland' (growing since 1840) for its structural diversity and long continuity of habitat.
- Scrub and scrub edge habitats associated and in balance with ancient 'unimproved' limestone grassland for their resident species and species that use them for migration or overwintering.
- Areas of thin soils, rocky areas, disturbed ground, and dry stone walls for their specialised flora and fauna.
- Ancient wildflower rich neutral grasslands particularly ancient wildflower rich floodplain meadows.
- Arable fields containing measures that support existing populations of important arable plants and farmland birds.
- New large extensively grazed areas that include wildflower grassland and other habitats within a dynamic matrix that allows natural processes to take place.

Medium priority

Locally important habitats that make a significant contribution to the nature recovery network.

- Wetland habitats including wet woodlands.
- Secondary woodland including recently established or planted woodlands where they have a varied physical structure and/or contribute towards ecological connectivity. They can also improve over time with creative design and positive management.
- Restored or recreated wildflower rich grasslands that improve ecological connectivity between existing sites.
- Arable fields with managed wildflower rich margins and wildflower rich arable lays particularly where they improve ecological connectivity.'

2.5 Policy 4.2.2 is relation to Priority Species, states:

'Highest priority

Species identified within the Cotswolds Management Plan

The priority species identified in the AONB Management Plan 2018- 2023 are the highest priority species for conservation action within the Cotswolds. These are species which are considered to be both characteristic of the Cotswolds, and species for which the Cotswolds is considered to be a stronghold. This list undergoes interrogation on five yearly cycles with each management plan revision. These species are:

- Farmland birds such as skylark, Lapwing and corn bunting
- Pearl-bordered fritillary
- Arable plants
- Juniper
- Cotswold pennycress
- Bats
- Dormouse
- Water vole
- Limestone grassland
- butterflies
- Brown hare
- Marsh fritillary
- Violet click beetle
- White clawed crayfish
- Native brown trout
- Bath asparagus

Landscape and Ecological Baseline

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

- Common box
- Rockrose pot beetle
- Rugged oil beetle
- Ancient woodland ground
- flora such as helleborines
- and angular Solomon's seal

Key species identified for this Cotswolds Nature recovery Plan are.

- Adder
- Brown hare
- Corn bunting
- Cotswold pennycress
- Duke of Burgundy butterfly
- Juniper
- Pasqueflower
- Small-leaved lime

High priority

Species of principal importance for the conservation of biodiversity in England' listed in section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

A subset of these species are the primary species identified for action by the Back from the Brink Limestone's Living Legacy project. Completing in 2021, Back from the Brink was a national programme with funding from the National Lottery Heritage Fund. It aimed to save 20 species from extinction and ensure the recovery of a further 92. The primary species for the Limestone's Living Legacy project each have a summary sheet produced by the project which can be downloaded from the Back from the Brink species summaries webpage. Alternatively, they can all be downloaded as one document here. This document also contains a compilation of recommendations for future work. These primary species are:

- Basil thyme
- Cotswold pennycress
- Duke of Burgundy
- Fly orchid
- Greater horseshoe bat
- Grey long-eared bat
- Juniper

- Large blue
- Marsh fritillary
- Pasqueflower
- Purple milk vetch
- Red-shanked carder bee
- Rockrose pot-beetle
- Ruderal bumblebee
- Rugged oil beetle

Species that have an important ecological effect or are a part of an important habitat are also of a high priority. A full list has not been developed but examples include yellow rattle, important for assisting grassland wildflowers by supressing vigorous grasses as a parasite, and devil's-bit scabious which is important as the larval food plant for the marsh fritillary butterfly and a late season nectar source for many invertebrates.

Medium priority

Widespread and common species that are not part of an important habitat. These species are still an important component of a nature recovery network. There are too many to list but an example is the many common invertebrates that provide pollinating services and/or are important food source for insectivorous birds.'

- **2.6** The CSEC is subject to Cotswold District Local Plan 2011-2031. Policy EN8 -Biodiversity and Geodiversity: Features, Habitats and Species:
 - '1.Development will be permitted that conserves and enhances biodiversity and geodiversity, providing net gains where possible.
 - 2.Proposals that would result in significant habitat fragmentation and loss of ecological connectivity will not be permitted.
 - 3.Proposals that reverse habitat fragmentation and promote creation, restoration and beneficial management of ecological networks, habitats and features will be permitted, particularly in areas subject to landscape-scale biodiversity initiatives. Developer contributions may be sought in this regard.
 - 4.Proposals that would result in the loss or deterioration of irreplaceable habitats and resources, or which are likely to have an adverse effect on internationally protected species, will not be permitted.
 - 5. Development with a detrimental impact on other protected species and species and habitats "of principal importance for the purpose of conserving biodiversity"

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

will not be permitted unless adequate provision can be made to ensure the conservation of the species or habitat.'

- **2.7** The CSEC is subject to Cotswold District Local Plan 2011-2031² EN5 Cotswold Area of Outstanding Natural Beauty (AONB) which states:
 - '1.In determining development proposals within the AONB or its setting, the conservation and enhancement of the natural beauty of the landscape, its character and special qualities will be given great weight.
 - 2.Major development will not be permitted within the AONB unless it satisfies the exceptions set out in national Policy and Guidance.'

Landscape Baseline

Landscape Designations

2.8 The CSEC is located within the CNL (an AONB). Paragraph 182 within Section 15 of the National Planning Policy Framework³ (NPPF) states:

'Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.'

- **2.9** Within the Cotswolds National Landscape Management Plan 2023-2025, policy CE1 of the management plan in relation to landscape states:
 - '1. Proposals that are likely to impact on, or create change in, the landscape of the Cotswolds National Landscape, should have regard to, be compatible with and reinforce the landscape character of the location, as described by the Cotswolds Conservation Board's Landscape Character Assessment and Landscape Strategy and Guidelines. There should be a presumption against the loss of key characteristics identified in the landscape character assessment.

- 2. Proposals that are likely to impact on, or create change in, the landscape of the Cotswolds National Landscape, should have regard to the scenic quality of the location and its setting and ensure that views including those into and out of the National landscape and visual amenity are conserved and enhanced.
- 3. Conserving and enhancing landscape character should be a key objective of Environmental Land Management and rural development support mechanisms in the Cotswolds National Landscape...'

Landscape Character and Guidelines

- 2.10 The CSEC is located within LCT 7 High Wold and specifically within 7C Cotswolds High Wold Plateau LCA. The landscape strategies and guidelines for LCT 7 as set out in the Cotswolds AONB Landscape Strategy and Guidelines, June 2016, in relation to the introduction of vertical elements such as electricity pylons particularly on prominent hill top, valley rim and escarpment edge locations are as follows:
 - 'Conserve the open, remote character by objecting to the development of vertical elements on the skyline or where these would adversely affect views across and to the High Wold
 - Ensure the development of vertical elements in neighbouring LCTs and areas beyond the AONB do not adversely affect views to, from and across the High Wold.
 - Ensure alternative options have been fully considered
 - Minimise impact by locating new communication masts on existing structures or by using existing masts.
 - Set masts etc against trees
 - Bury cables underground and seek opportunities to bury existing overhead cables.
- Avoid use of visually prominent urban security fencing and CCTV masts.
- Consider other renewable energy or communication technologies
- Ensure full assessment of heritage setting impacts and appropriate measures undertaken
- Seek to minimise the size and number of road signs'

² Cotswold District Council (2018) Cotswold District Local Plan 2011-2031 (cotswold.gov.uk)

³ National Planning Policy Framework, December 2023 (https://www.gov.uk/government/publications/national-planning-policy-framework--2)

Landscape and Ecological Baseline

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

Cotswolds Conservation Board Position Statement, Landscape Led Development, April 2021

2.11 In relation to conserving and enhancing natural beauty, the position statement provides the following recommendations:

- 'Development proposals should (be required to) make a positive contribution to conserving and enhancing the natural beauty of the Cotswolds National Landscape, over and above the baseline condition (i.e. delivering a net-benefit for natural beauty).
- Measures to conserve and enhance the natural beauty of the Cotswolds National Landscape (to deliver a netbenefit for natural beauty) should be integrated into the planning, design, implementation and management of a proposed development from the development's inception, particularly for major development.
- Where a net-benefit for natural beauty cannot be achieved on-site, consideration should be given to measures to enhance the natural beauty of the Cotswolds National Landscape off-site.'

Landscape and Ecological Aims

3.1 The overall aim for the LEMP is to manage the site for the lifetime of the proposed project, to protect existing features within the site during construction and manage existing landscape and ecological features including new planting, for the benefit of local wildlife, as well as to ensure long term visual mitigation of the CSEC. The aims will be achieved through a series of objectives and the identification of management operations to achieve these.

Purpose of the LEMP

- **3.2** The main purpose of the LEMP is as follows:
- To ensure that the landscape character of the CNL is conserved and enhanced where possible;
- To ensure that biodiversity net gain targets and strategies are achieved;
- To ensure the protection, management and control of invasive species, protected and notable species and flora, in line with legislative and policy requirements;
- To set out the agreed objectives for landscape and ecological management of the site;
- To set clear standards for the performance of landscape maintenance work;
- To assist in the development of work programmes for landscape maintenance staff;
- To establish landscape and ecological maintenance responsibilities; and
- To help monitor success and progress against the aims and objectives.
- **3.3** Subsequent management and monitoring of the site will be put in place to ensure the benefits are long-lasting.

Biodiversity/Ecology Strategy

New Grassland

- **3.4** Grassland will be planted within the CSEC which is identified as areas of 'Grass Mixes' on the landscape proposals plan (Appendix A). The management strategy is detailed in Chapter 6 of this report.
- **3.5** Grassland areas will also be seeded with Field Scabious (*Knautia arvensis*) and Kidney Vetch (*Anthyllis vulneraria*) as

Landscape and Ecological Aims

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

these are key species for small blue (*Cupido minimus*), marsh fritillary (*Euphydryas aurinia*) and other important butterfly species.

3.6 These areas will also be planted with plugs of Devil's-bit Scabious (*Succisa pratensis*) as this does not grow well from seeding and is an important plant for marsh fritillary butterfly. These will be planted at a density of five plugs per m².

New Native Mixed Scrub

3.7 Mixed scrub will be planted within the CSEC which is identified as areas of 'Native Scrub Mix' within the landscape drawings (Appendix A). The management strategy is detailed in Chapter 6 of this report. These areas will be planted with the scrub mix as also detailed on the landscape proposals plan.

New Native Woodland Mix

- **3.8** New native woodland will be planted within the CSEC which is identified as areas of 'Native Woodland Mix' on the landscape proposals plan within Appendix A. The management strategy is detailed in Chapter 6 of this report.
- **3.9** These areas will be planted with the woodland mix as detailed on the landscape proposals plan in Appendix A and seeded with EW1 Woodland Mixture or similar, as also detailed on the plan.

New Native Hedgerow

- **3.10** A new native hedgerow with scattered trees will be planted within the CSEC, which are identified as areas of 'Native Hedgerow' and 'Standard Trees' on the landscape proposals plan within Appendix A. The management strategy is detailed in Chapter 6 of this report.
- **3.11** These areas will be planted with the hedgerow mix and EH1 Hedgerow Mixture, or similar for ground flora. These areas will also be seeded with Primrose (*Primula vulgaris*) as this is a key species for the Duke of Burgundy (*Hamearis lucina*) butterfly, which lays its eggs under Primrose leaves.
- **3.12** Standard native trees will be planted within the hedgerow which are detailed on the landscape proposals plan within Appendix A.

Landscape Strategy

- **3.13** The landscape proposals are contained within Appendix A. The principle aims of the proposed landscape mitigation in relation to the CSEC are summarised as follows:
 - To provide visual enclosure to the proposed CSEC particularly where viewed from the Cotswold Way National Trail to the west, the public right of way to the south-east (KWH19) and more distant views from

- elevated land to the south, through provision of new native woodland, tree, scrub and hedgerows;
- To restore all land to its former agricultural use; and
- To provide long term management of existing and proposed vegetation to enable the landscape character of the area is restored and to ensure visual mitigation establishes.

Responsibilities

- **4.1** The overall responsibility for the implementation of the application site (land within the red line planning application boundary surrounding the CSEC and associated access) will be National Grid and/or their appointed contractor, working in conjunction with the landowners. Management of the application site will be agreed at a later date but is likely to include all proposed landscape surrounding the CSEC. Implementation and maintenance works will be undertaken by a suitably qualified landscape contractor. Specialist ecological or arboricultural input or implementation may also be required.
- **4.2** National Grid and/or their appointed contractor will be required to undertake management and maintenance of the site (excluding habitats due to be handed over to landowner) for a 30 year period.
- 4.3 The Environment Act (2021)⁴ introduces a mandatory requirement for a minimum 10 % biodiversity net gain in February 2024 for new developments to ensure that they enhance biodiversity and create new green spaces for local communities to enjoy. Integrating biodiversity net gain into the planning system will provide a step change in how planning and development is delivered. There is also a strong focus on delivering environmental net gain. This would preferably be achieved onsite, however there are options to deliver these gains offsite and this is detailed within the biodiversity net gain report and the associated Statutory Biodiversity Metric for the site (Arcadis 2024).
- **4.4** Cotswolds National Landscape Management Plan 2023-2025⁵ has an inspiration of a minimum 20% biodiversity net gain on site.

⁴ HMSO (2021) The Environment Act (https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted)

Otswolds National Landscape Board (2023) Cotswold National Landscape Management Plan 2023-2025

Landscape and Ecological Management during Construction

Construction Environment Management Plan

- **5.1** Once appointed, the contractor will be required to develop a detailed Construction Environment Management Plan (CEMP), which will be based on the outline CEMP submitted with the planning application and will specify actions and responsibilities to protect and manage all identified mitigation measures prior to and during construction. The detailed CEMP will describe how construction activities will be undertaken and manged in accordance with commitments and requirements identified within this document, as well as contractual and legislative requirements, and construction industry best practice.
- **5.2** The additional management objectives and prescriptions during construction are set out below.

Construction Management Objectives

- **5.3** The following objectives through the construction phase of the proposed development are as follows, some of which will follow the completion of all other elements of construction work associated with the CSEC:
- To adequately protect existing retained habitats and features from damage and disturbance;
- To ensure that all publicly accessible areas close to construction works are safe to use;
- To ensure protected and notable species are adequately safeguarded during construction to ensure their continued favourable conservation status;
- To provide habitat and landscape enhancements through planting and ensure this is protected from damage and disturbance;
- Create areas of grassland;
- Create areas of mixed scrub;
- Create areas of native woodland; and
- Create areas of native hedgerow with trees.

Landscape and Ecological Management during Construction

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

Construction Management Prescriptions

Ecological Clerk of Works

- **5.4** An Ecological Clerk of Works (ECoW) will be appointed to oversee the enabling works. As defined by the Chartered Institute for Ecology and Environmental Management (CIEEM), an ECoW is a professional that can work on site with construction contractors to:
 - Advise on protecting valued biodiversity features on construction sites.
- Provide practical, site-specific and proportionate assistance on how their clients can achieve compliance with environmental legislation.
- Avoid unexpected costs, delays to project timetables, or adverse publicity that may have future negative commercial implications, and ultimately risk of enforcement action and/or potential prosecution.
- Manage ecological operatives engaged in ecological mitigation activities – such as undertaking ecological watching briefs and translocation of protected species

Removal of Existing Vegetation

5.5 Where vegetation is to be removed, it will be carried out outside the bird nesting season, i.e. not between March and August. Where works in the spring/summer are unavoidable, vegetation will be cleared the preceding winter or following a survey to confirm the absence of nesting birds. Indicative locations of vegetation removal are set out in detail within the Arboricultural Impact Assessment, submitted as part of the planning application.

Existing Retained Habitats and Features

- **5.6** Prior to any construction works associated with the proposed project, temporary protective fencing will be installed around areas of high value vegetation and habitat, in accordance with the Arboricultural Impact Assessment. The purpose of fencing will be to act as protection against construction activity for boundary trees, scrub and hedgerows throughout the implementation of the scheme.
- **5.7** The temporary protective fencing will be erected in accordance with BS5837:2012, and should be located as set out in the Arboricultural Impact Assessment, allowing construction of the scheme to be unhindered.
- **5.8** The temporary protective fencing shall remain in place until all construction activities have taken place. The fencing should not be moved at any point during construction, with stockpiling of materials prohibited within the exclusion area and no vehicles allowed to enter the exclusion area at any point during construction.

Publicly Accessible Areas

5.9 There will be clear delineation of working areas and public access routes within and around the site. Any diversions of footpaths will be clearly marked, with appropriate standoffs and signage. More detail will be set out in the Construction Phase Plan.

Protection of Notable Species

- **5.10** To ensure the project is legally compliant a range of preconstruction surveys will be undertaken by the ECoW before implementing any mitigation measures. Protected / notable species are mobile and can appear at any time and although a full baseline has been established this check provides an extra level of certainty to avoid delays to the programme.
- **5.11** Pre-construction surveys/checks will be undertaken for the following:
 - invasive plant species;
 - badgers;
 - otter;
 - roosting bats;
 - reptiles; and
- nesting birds including barn owl.
- **5.12** Surveys will involve a pre-vegetation clearance / tree felling walk-over where all habitats will be thoroughly checked to ensure no protected / notable / invasive species are present.
- **5.13** Vegetation clearance is required to facilitate construction. The CSEC supports modified grassland, cereal crops, developed land; sealed surface, lowland mixed deciduous woodland, bare ground, mixed scrub and other neutral grassland.
- **5.14** It is anticipated that the clearance of trees and other woody vegetation will be undertaken during the winter to avoid the nesting bird season.
- **5.15** The remaining vegetation and topsoil strip will take place from March onwards (weather dependent). This work will be undertaken to avoid the main period of hibernation for amphibians, reptiles and small mammals. When wildlife is more active, precautionary methods can be implemented to ensure they can escape from working areas unharmed.
- **5.16** Vegetation clearance works in areas suitable for reptiles will be undertaken using a two-stage cut approach with hand searches by the ECoW and all stone walls will be dismantled by hand. These precautionary methods will minimise the risk of harm to reptiles and will be detailed within a Method Statement.

Landscape and Ecological Management during Construction

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

- **5.17** During construction and vegetation clearance works this LEMP will be supported by Method Statements which will detail precautionary working methods, which do not contravene the legislation regarding protected species, in areas identified as having potential to support protected species.
- **5.18** These Method Statements providing detailed information regarding the removal of vegetation will be included within the detailed CEMP.
- **5.19** The aim of a Method Statement is to reduce the risk of causing degradation of existing vegetation and habitats and injury or mortality of protected species and avoid contravention of the relevant legislation. The ECoW will determine exactly when and where it is appropriate to apply the measures described in the individual Method Statements. The ECoW will oversee and quality control the implementation of the tasks undertaken.
- **5.20** It is the responsibility of the site contractors to carry out the works in a manner which will not contravene the legislation regarding protected species in the areas identified as having potential to support protected species. Any variations from the LEMP and ecology method statement/s may contravene legislation and risk prosecution. It is their joint responsibility that no changes to the timings or methods are made without prior agreement from the ECoW.
- **5.21** Prior to commencement of the vegetation clearance, all site contractors will be briefed by the ECoW as part of the Site induction. The toolbox talk will provide a basic overview of the life history, habitat requirements, identification and legal protection granted to the legally protected species and other species of conservation concern present on site that may be encountered during the works.
- **5.22** Toolbox talks will also be undertaken as necessary to identify the habitats present on site that have the potential to be used by these species and outline the environmental measures to be followed to avoid breaches of legislation and/or adverse effects on protected species that could occur within or in the vicinity or the work area. The ECoW will give the toolbox talk to any new contractors joining the team, as required, at any stage of the works on the relevant phase of the development.
- **5.23** There will be a declaration for those present to sign to confirm they have understood the constraints and actions presented.

Landscape Enhancements

5.24 The proposed landscape mitigation planting will include new native hedgerows, trees, woodland, scrub and grassland. An indicative species list of suitable plants is set on landscape proposals plan within Appendix A. Should the proposed

species need to be altered for any reason, this should be agreed with the local authority prior to implementation.

- **5.25** The implementation of the landscape proposals will be subject to a detail landscape specification, to ensure that it is planted in accordance with British Standards and general good horticultural practice. The landscape specification will ensure that the correct ground preparation is undertaken dependent upon the type of planting, along with appropriate products and soils to ensure successful establishment and protection.
- **5.26** All plants used should be supplied and handled to comply with BS 3936 and the National Plant Specification.
- **5.27** The contractor will be responsible for ensuring that underground cables and foundations associated with the application site are adequately protected in order to prevent root damage or interference.

Landscape and Ecological Management during Operation

- **6.1** The following landscape and ecological objectives through the operational phase of the proposed project are as follows:
 - To maintain and manage existing vegetation, to safeguard visual enclosure and retain as wildlife corridors;
 - To establish and maintain new areas of proposed tree, hedgerow and woodland/scrub planting on the site to aid in visual mitigation of the CSEC from adjacent accessible areas and from surrounding views;
 - To enhance the setting of public rights of way adjacent or close to the CSEC;
 - To manage the new species rich grassland and establish a diverse sward;
 - To establish a flexible management and maintenance regime able to respond to changing needs or objectives, including climate change;
 - To monitor the site and assess the success of management;
 - Manage the establishment and 5-year aftercare of the newly created habitats including grassland, scrub, woodland and hedgerow with trees;
 - Implement the long-term management (5 year onwards throughout the operational lifetime of the project) of newly created grassland habitats;
 - Implement the long-term management (5 year onwards throughout the operational lifetime of the project) of newly created mixed scrub habitats;
 - Implement the long-term management (5 year onwards throughout the operational lifetime of the project) of newly created native woodland; and
 - Implement the long-term management (5 year onwards throughout the operational lifetime of the project) of newly created native hedgerow with trees.
- **6.2** In order to achieve the objectives outlined above, the following management prescriptions have been identified.

Landscape and Ecological Management during Operation

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

Existing Hedgerows

Aspirations

6.3 Existing hedgerows or other areas of linear vegetation within the site shall be managed to maximise their screening potential, as well as encourage local wildlife.

Management Guidelines

- **6.4** Any dead, dying and diseased wood is to be removed annually or as required and as necessary, replaced with stock of a similar size and species by the appointed contractor. If the failure of the plant is due to disease and the disease is considered likely to re-occur, then an alternative native species of local provenance may be used as a replacement. Planting should ideally be undertaken between the months of December and February.
- **6.5** Hedgerows across the whole site to be cut on a rotational basis, i.e. not all areas in the same year. This will maintain a resource of flowering and fruiting plants across the site, create nesting and foraging habitat for wildlife, and prevent hedgerows becoming leggy.
- **6.6** Any cutting of vegetation should take place between late September and February and no cutting or trimming is to be undertaken during the breeding bird season (1st March to 31st August inclusive).
- **6.7** Any bramble growth is to be removed where it may be detrimental to the health of other plants. Other noxious weeds or invasive plants are to be appropriately removed.

Existing Trees

Aspirations

6.8 Existing trees shall be retained wherever possible to maintain height of planting and allow filtering of views towards the CSFC.

Management Guidelines

- **6.9** Management operations will ensure health and safety inspections are carried out at 12-15 month intervals, particularly those adjacent to or in proximity to public rights of way and highways, to note any:
- major deadwood that needs to be removed from crowns;
- split or damaged branches, storm damage, hung-up limbs, and jagged or open wounds that are identified as being a safety hazard by an arboriculturalist;
- forks, cavities and major defects that could result in structural failure, cavities, cracks or bark wounds at the base of trees, together with bracket fungus. An

- arboriculturalist will probe cavities as required to determine the course of action;
- basal suckers or epicormic growth that require removal from the main trunk:
- poor quality trees with structural defects, such as forked trunks that may require pruning or felling; and
- diseases.
- **6.10** Ivy on tree trunks will be retained, except where it needs to be removed to facilitate inspection of trees or where it has become extensive and could result in a tree falling in high winds.

New Hedgerows

Aspirations

6.11 The establishment of healthy native hedgerows will provide an attractive and functional screen around parts of the CSEC and will enhance the setting of public rights of way. The hedgerow will also enhance the ecological value of the site and will enhance habitat connectivity in conjunction with other vegetation.

Management Guidelines

- **6.12** All canes, spirals or guards shall be regularly checked and adjusted or replaced as required. Targeted applications of systematic herbicide will be used to ensure hedgerow species are not outcompeted; or a combination of visits to manually remove weeds in conjunction with the use of herbicide, during the first three years. Thereafter the ground flora is to be allowed to develop naturally in order to contribute to the wildlife value of the hedgerow and managed as an existing hedgerow.
- **6.13** Any litter is to be cleared at the same time as weed control operations.
- **6.14** All hedge lines shall be regularly watered in times of drought to field capacity and, if required, shall receive an application of slow-release fertiliser for the first three years.
- **6.15** Plants will remain upright and adjusted during treatment of weeds. Rabbit protection will be retained/replaced until no longer needed, when it will be removed from site and disposed of. This is to be checked annually.
- **6.16** All hedges shall be allowed to grow up to a minimum of 3m high and maintained at 3m or above. Any plants that fail to thrive shall be replaced with stock to the original specification. Growth over public rights of way or the proposed CSEC shall be avoided.
- **6.17** Annual inspection is to be undertaken in September to replace dead/diseased plants at the end of each growing

Landscape and Ecological Management during Operation

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

season and to be replaced within the first five years after planting. Pruning will be undertaken to promote healthy growth, where required, between September – February to avoid bird breeding season.

- **6.18** Mulching material around the hedgerow planting to be topped up annually or as required until the plants have established.
- **6.19** Once new hedgerows have established, management operations are to reflect those as set out for existing hedgerows.

New Woodland/Scrub Planting

Aspirations

- **6.20** The new native woodland will provide longer-term visual enclosure to the proposed CSEC, as well as creating valuable ecological habitat within the locality. The species and layout will reflect the local landscape pattern and will aid to enhance the landscape character.
- **6.21** The proposed native scrub will allow additional visual enclosure to the proposed CSEC in locations where overhead and underground cables restrict the planting of trees and woodland. Native scrub will also act as an important habitat for local wildlife.

Management Guidelines

- **6.22** Operations within new areas of woodland/scrub planting would include the following:
- dead, dying and diseased wood and suckers will be removed annually to promote healthy growth, a natural shape and to avoid health and safety concerns;
- dead, missing, dying or defective plants will be replaced annually;
- plant protection will be maintained until no longer needed and then removed. This will be checked annually;
- if required, a slow release fertiliser (4:19:10) will be spread annually in early March in the first three years after planting or replanting after defects replacements;
- all canes, spirals or guards shall be regularly checked and adjusted or replaced as required. Targeted applications of systematic herbicide will be used to ensure woody species are not outcompeted; or a combination of visits to manually remove weeds in conjunction with the use of herbicide, during the first three years. Thereafter the ground flora is to be allowed to develop naturally in order to contribute to the wildlife

- value of the hedgerow and managed as an existing hedgerow;
- any litter is to be cleared at the same time as weed control operations;
- plants overhanging access roads will be trimmed back annually;
- self-sown trees will be removed annually by digging up or use of suitable herbicides; and
- plants will be watered in dry weather in the initial three year establishment period. Watering will be carried out twice a week to field capacity. Beyond the establishment period, watering will be in times of drought.

New Trees

Aspirations

6.23 New trees will provide instant height to areas of woodland or along hedgerows, filtering views towards the CSEC from nearby roads and public rights of way.

Management Guidelines

- **6.24** Operations for new tree planting will include the following:
 - dead, dying and diseased wood and suckers will be removed annually to promote healthy growth, a natural shape and to avoid health and safety concerns;
 - dead, missing, dying or defective plants will be replaced annually;
 - all tree stakes, ties and guards will be adjusted/ replaced/ removed as required until anchorage has been achieved. This will be done annually;
 - rabbit/deer protection will be maintained until no longer needed. This will be checked annually;
 - weed-free ground will be maintained with the use of translocated, non-residual herbicides, in order to avoid competition for water and nutrients. This will be done four times a year;
 - if required, a slow release fertiliser (4:19:10) will be spread annually in early March in the first three years after planting or replanting after defects replacements;
 - plants will be watered in dry weather in the initial three year establishment period. Watering will be carried out twice a week to field capacity. Beyond the establishment period, watering will be in times of drought; and
 - trees are maintained upright and adjustments will be made following strong winds.

Landscape and Ecological Management during Operation

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

Grassland

Aspirations

6.25 Establishment of a diverse species rich grass sward which provides visual interest and attractive edges to the site, Ham Road and adjacent to public rights of way (KWH19 and Cotswold Way National Trail). Management of grassland will be key to creating a successful habitat and will provide seasonal interest.

Management Guidelines

6.26 Areas of grassland have been defined on the plans within Appendix A, along with suggested seed mixes, to ensure the use of seeds with local provenance. The exact location of each seed mix has not yet been defined at this stage of the design process, and therefore, the management guidelines set out below, are subject to change to suit specific scenarios for maintenance.

Mowing

- **6.27** The grassland shall be mown under differing regimes for Year 1 after seeding and subsequent years, as detailed below.
- **6.28** Mowing will only take place during periods of dry weather to ensure that no waterlogged ground is damaged by machinery.
- **6.29** The grassland will not be improved by chemical fertilizer or slurry and nutrient levels in the soil should be allowed to reduce over time.
- **6.30** All arisings should remain on site for three to five days following the cut to allow seeds to disperse, and then either removed from site or placed on habitat piles within margins. No arisings are to be left in proximity to public rights of way or close to the CSEC.

Year 1

- **6.31** Newly seeded grassland will be subject to regular cutting to a height of 15cm or 20cm during the breeding bird season, during the first year of establishment in order to prevent annual weeds from establishing. This shall constitute a cut 6-8 weeks after sowing and then every month thereafter between May and September.
- **6.32** The frequency of cutting will be increased should annual weeds establish.

Subsequent Years

6.33 After the first year following seeding, grassland will be managed by mowing as per the table below:

Table 6.1: Mowing regime after Year 1

January	No mowing required					
February	Cut can be undertaken (if necessary), to approx. 15cm					
August – September	Cut to approx. 15 or 20cm during the breeding bird season (by mowing) once the wildflowers have seeded; cut grassland slowly and allow opportunities for animals and birds to escape.					
Late September – end of December	No mowing required					

- **6.34** Cutting should adopt a systematic method (i.e. working outwards towards the boundary features); this will allow fauna to temporarily and safely vacate the area.
- **6.35** The management will take a flexible approach and the exact dates will be dependent upon weather conditions. A phased (rotational) cutting regime is recommended (i.e., ideally the entire area should not be cut at the same time) in order to allow a more varied structured grassland.
- **6.36** Where grass is located adjacent to roads and public rights of way, a 1-2m width strip will be cut every two months during the growing seasons, to ensure grass does not encroach onto these routes.

Re-seeding: Years 1 and 2

- **6.37** Newly seeded areas are unlikely to remain bare for extended periods of time. In the unlikely event that grassland fails to become established upon areas of bare ground created during the works, these areas should be lightly scarified and reseeded with the same seed mix used to seed the site at the during the construction phase. An inspection will be undertaken in early August following completion of the installation. Should the proportion of bare ground be greater than 20% then sowing should be repeated in these areas.
- **6.38** Reseeding in August is likely to be particularly appropriate where the months of May, June and July have been very dry.

Re-seeding: Year 5

6.39 If monitoring finds that by Year 5 following seeding the sward contains <10% cover by forbs, or that the sward contains <75% of the species which were included in the seed mix, then targeted re-seeding will be conducted.

Landscape and Ecological Management during Operation

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

Public Right of Way

Aspirations

6.40 The public rights of way in proximity to the CSEC and elsewhere should be kept clear and open at all times.

Management Guidelines

- **6.41** All signage is to be checked regularly, with overhanging vegetation removed where necessary. This includes road signage for site access.
- **6.42** Any broken or damaged signs, fences or surfaces are to be reported upon finding. Any repairs deemed to be the responsibility of the contractor shall be undertaken promptly and using matching materials or surfacing.
- **6.43** All paths shared with public rights of way are to be kept free of litter, with any obstructions, including vegetation, to be removed.

Outline Maintenance Schedule

7.1 The table below sets out a high level annual work programme and schedule for all management and maintenance operations. The schedule should be read in conjunction with site plans within Appendix A and the management guidelines above. The maintenance schedule sets out all maintenance operations to be undertaken on the site for the initial five years. Unless otherwise amended as part of the monitoring the progress of management and maintenance on site, these operations should continue for the lifetime of the development.

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

Table 7.1: Outline Maintenance Schedule for first 5 Years

Management Guidelines	Operation Phase											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Existing Hedgerow Management Rotational Cutting every 2/3 years. No more than 1/3 cut in any one year. Replacement of poor stock.	Trimming /Cutting Back & Replacing poor stock								Trimming/Cutting Back			utting
Existing Tree Management Following an annual inspection	Tree works to be carried out											
New Tree, Hedgerow and Woodland/ Scrub Management Slow-release fertiliser for the first 3 years Replace dead/diseased plants.	Trimming / Pruning Replacing poor stock		Slow relea		Weeding				Trimming / Pruning			
Prune as required annually. Weed control 4 times per year.			Slow release fertiliser					Inspection	Replacing poor stock			
Management of Grassland – Year 1												
Cutting of newly seeded grassland to prevent unwanted weeds.												
Re-seed as necessary.												
Management of Grassland – Subsequent Years Re-seed as necessary		Grass cut						Gras	ass cut			
Management of Grassland – Subsequent Years where adjacent to roads and public rights of way												
Cut every two months												
Re-seed as necessary												
Management of Injurious Weeds for Grassland, Trees, Woodland, Scrub & Hedgerows – Existing and Proposed												
Public Right of Way Visual inspection, including immediate repairs to features or surfacing												

Monitoring and Review

- **8.1** The LEMP is a working document which sets out principles to be tailored and refined by National Grid and/or their appointed contractor who will develop an intimate understanding of the site.
- **8.2** This LEMP should be reviewed and updated by the organisation responsible for the site. The document provides a framework for management of the site over a 30 year period, however, it will need to be reviewed and updated periodically to ensure management responds to the specific requirements of the site, approximately every five years.
- **8.3** Monitoring and review of the LEMP should ideally comprise the following:
 - Monitor success of maintenance regimes and outline work schedules throughout the year. Collate species and monitoring records as required. This should include ongoing BNG monitoring to ensure expected BNG is achieved.
- The site will be registered within the National Grid biodiversity tracker and within the Biodiversity Gain Site Register which is currently being developed by Natural England.
- Records are to be kept of all routine management undertaken and all monitoring inspections which will be undertaken by National Grid or their appointed consultants, and shall include the following information:
 - date;
 - personnel;
 - management undertaken (provide plan to indicate areas covered);
 - landscape features monitored;
 - monitoring outcomes for each feature;
 - any remedial actions taken at the time;
 - remedial actions required, including timescales and personnel; and
 - specific advice and guidance needed to interpret monitoring outcomes.
- Monitoring the effects of management prescriptions is required to ensure they are effective, and to inform any

Monitoring and Review

Cotswolds VIP - Whittington Cable Sealing End Compound May 2024

necessary refinement of site management protocols to deliver the proposed ecological objectives.

- The appointed management contractors may occasionally identify unforeseen impacts, in which case the appointed specialists may need to be consulted to suggest appropriate remedial actions.
- Adjust and record changes to maintenance schedules and guidelines in response to site monitoring.
- Undertake a comprehensive review and update of the LEMP every ten years, including a review of the vision, aims and objectives.
- **8.4** Any issues arising during each visit by the appointed contractor shall be raised immediately, preferably whilst still on site.

Appendix A

Landscape Proposals

