West Burton C (Gas Fired Generating Station)

The West Burton C (Generating Station) Order 2019

Land to the north of the West Burton B Power Station, Nottinghamshire

Landscaping and Biodiversity Management and Enhancement Plan

Applicant: EDF Energy (Thermal Generation) Limited
Date: April 2019 (update October 2019)

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Author	Steven Ward MCIEEM, Lyndsey Spawforth MCIEEM, Richard Bassindale CMLI		
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Approved By	R. Lowe		
Signed		**Date**	OctoberApril 2019
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GLOSSARY

ABBREVIATION	DESCRIPTION
Applicant	EDF Energy (Thermal Generation) Limited
BDC	Bassetlaw District Council – the local planning authority with jurisdiction over the area within which the West Burton Power Station site and Proposed Development Site (the Site) are situated.
British Standard	Standard produced by the British Standards Institution based upon the principles of standardisation recognised inter alia in European Policy.
CoW	Clerk of Works - a person who oversees building work in progress.
DCO	Development Consent Order - made by the relevant Secretary of State pursuant to The Planning Act 2008 to authorise a Nationally Significant Infrastructure Project. A DCO can incorporate or remove the need for a range of consents which would otherwise be required for a development. A DCO can also include rights of compulsory acquisition.
DEFRA	Department for Environment, Food and Rural Affairs – the UK government department responsible for environmental protection, food production and standards, agriculture, fisheries and rural communities in the United Kingdom. The department's priorities are to grow the rural economy, improve the environment and safeguard animal and plant health.
GI	Green Infrastructure – a network contributing to solving urban and climatic challenges by building with nature, including storm water management, climate adaptation, less heat stress, more biodiversity, food production, better air quality, sustainable energy production, along with clean water and healthy soils.
km	Kilometre - unit of distance.

ABBREVIATION	DESCRIPTION
kV	Kilovolt - unit of voltage.
LBAP	Local Biodiversity Action Partnership – partnerships that operate at a local authority level and help conserve and enhance biodiversity. The partnerships deliver a wide range of biodiversity conservation, communication and education work in their local areas.
MW	Megawatt – unit of power.
NERC	Natural Environment and Rural Communities Act – act designed to help achieve a rich and diverse natural environment.
NJUG	UK's Industry Association for street works issues promoting best practice.
NPPF	The National Planning Policy Framework – Policy Framework which first came into effect in March 2012 (with some transitional arrangements) replacing the majority of national planning policy other than NPSs. A revision of the NPPF was published in July 2018 by the Ministry of Housing, Communities and Local Government and updated again in February 2019. The NPPF is part of the Government's reform of the planning system intended to make it less complex, to protect the environment and to promote sustainable growth. It does not contain any specific policies on Nationally Significant Infrastructure Projects but its policies may be taken into account in decisions on DCOs if the Secretary of State considers them to be 'relevant'.
NPSs	National Policy Statements – statements produced by Government under the Planning Act 2008 providing the policy framework for Nationally Significant Infrastructure Projects. They include the Government's view of the need for and objectives for the development of Nationally Significant Infrastructure Projects in a particular sector such as energy and are used to determine applications for such development.
NSIP	Nationally Significant Infrastructure Projects – defined by the Planning Act 2008 and covers projects relating to energy (including generating stations, electric lines and pipelines); transport (including trunk roads and motorways, airports, harbour facilities, railways and rail freight interchanges); water (dams and reservoirs, and the transfer of water resources); waste water treatment plants and hazardous waste facilities. These projects are only defined as nationally significant if they satisfy a statutory threshold in terms of their scale or effect.
NTS	National Transmission System – operated by National Grid, the system of gas supply infrastructure comprising approximately 7,660 kilometres of high-pressure pipe and 618 above-ground installations.
OCGT	Open Cycle Gas Turbine – a combustion turbine plant fired by gas or liquid fuel to turn a generator rotor that produces electricity.

ABBREVIATION	DESCRIPTION
WCA	Wildlife Countryside Act 1981 (as amended) – legislation for the protection of animals, plants and certain habitats in the UK.

Executive Summary

This Landscaping and Biodiversity Management and Enhancement Plan has been prepared on behalf of EDF Energy (Thermal Generation) Ltd (the Applicant) and forms part of the application for development consent for the construction, operation (including maintenance) and decommissioning of a new gas fired electricity generating station (the Proposed Development). The Proposed Development is located within the wider West Burton Power Station site, to the north of West Burton B (WBB) Power Station, in Nottinghamshire.

The purpose of this document is to set out the measures proposed to mitigate the potential impacts and effects of the Proposed Development on landscape and biodiversity features, and to enhance the biodiversity, landscape and green infrastructure value of the Proposed Development site (the Site).

The Ecological Impact Assessment presented in the Environmental Statement (ES) (refer to **Chapter 9**: Ecology (ES Volume I) (**Application Document Ref. 5.2**)) identified the potential for a significant adverse effect on great crested newt (*Triturus cristatus*) due to the temporary and permanent loss of habitat during construction of the Proposed Development, which would mainly comprise seeded grassland, young planted trees and scrub, and semi-mature plantation woodland. Habitat restoration and enhancement is required in order to compensate for the loss of habitat and maintain the favourable conservation status of the local great crested newt population, thereby avoiding a significant residual adverse effect on this species. Habitat restoration and enhancement is also required to compensate for habitat losses, in order to meet local and national planning policy objectives relating to the delivery of no net loss of biodiversity, and where possible, net gain.

The Landscape and Visual Amenity Assessment (refer to **Chapter 10**: Landscape and Visual Amenity (ES Volume I) (**Application Document Ref. 5.2**)) concluded that the Proposed Development would result in significant adverse effects on visual amenity at one of the assessed viewpoints (Viewpoint 4 users of public right of way (PRoW) Bole FP3B / Bole FP4 / residents at Bole). The addition of landscape features such as trees and woodland would not be effective in reducing the effects on visual amenity due to the size and scale of the Proposed Development. However, there remains a need to avoid impacts on trees, for appropriate restoration of the landscape following construction, and for enhancements to the landscape character and improvements to the green infrastructure network to meet requirements of local and national planning policy.

This document describes the landscape and biodiversity impact avoidance measures that would be implemented prior to and during construction, as well as the proposed habitat restoration, enhancement, management and monitoring measures to be implemented and secured through a Requirement of the draft DCO (**Application Document Ref. 2.1**).

The proposed landscape and biodiversity enhancement measures are summarised below. The proposals have been designed to be delivered within the existing land ownership of the Applicant and focus on enhancing the value of existing habitats within the vicinity of the Proposed Development:

- thinning out, diversification and ongoing management of existing areas of scrub habitat;

- management of existing pockets of reedbed to improve their structure and diversity and prevent succession to Carr Woodland;
- botanical enhancement of existing areas of seeded semi-improved neutral grassland to increase the proportion and diversity of wildflowers, with the aim of creating Local Biodiversity Action Plan (LBAP) quality lowland neutral grassland habitat;
- creation of hibernacula and habitat piles using materials generated during site clearance to provide refuge and hibernation opportunities for a range of fauna; and
- new tree planting to compensate for the loss of trees as a consequence of the Proposed Development.

Biodiversity offsetting metrics have been used to quantify the biodiversity value of the habitats to be lost, restored and enhanced to demonstrate that there would be no net loss, and overall, a small net gain of biodiversity as a result of the Proposed Development.

1. Introduction

1.1 Overview

1.1.1 This Landscaping and Biodiversity Management and Enhancement Plan has been prepared on behalf of EDF Energy (Thermal Generation) Limited (hereafter referred to as the Applicant). It forms part of the application (the Application) for a development consent, that has been submitted to the Secretary of State pursuant to the Planning Act 2008 (2008 Act) (Ref 1).

1.1.2 The Applicant is seeking development consent for the construction, operation (including maintenance) and decommissioning of a new gas fired electricity generating station of up to 299 megawatts (MW) of gross electrical output including electrical, gas and utility connections, a construction laydown area and other associated works (the Proposed Development) on land to the north of the existing West Burton B (WBB) Power Station, in Nottinghamshire. The Proposed Development is described in **Chapter 4**: The Proposed Development (ES Volume I) (**Application Document Ref. 5.2**).

1.1.3 The Proposed Development falls within the definition of a *'Nationally Significant Infrastructure Project'* (NSIP) under Section 14(1)(a) and Sections 15(1) and (2) of the 2008 Act, as it is an onshore generating station in England that would have a generating capacity greater than 50MW electrical output (50MWe). As such, a DCO is required to authorise the Proposed Development in accordance with Section 31 of the 2008 Act.

1.1.4 The DCO, if made by the Secretary of State, would be known as the 'West Burton C (Gas Fired Generating Station) Order' (the 'Order').

1.2 The Applicant

1.2.1 As described above, the Applicant is EDF Energy (Thermal Generation) Limited which owns and operates the two existing power stations at the West Burton Power Station site; West Burton A (WBA) and West Burton B (WBB), as well as the nearby Cottam Power Station.

1.2.2 EDF Energy (Thermal Generation) Limited is part of EDF Energy which is the UK's largest producer of low-carbon electricity, the biggest supplier of electricity by volume in Great Britain and the largest supplier to British business.

1.3 The Site

1.3.1 The Site comprises land within the boundary of the existing West Burton Power Station site near Gainsborough, Nottinghamshire. The land is within the ownership of the Applicant. The Site is centred on national grid reference 480275, 386241 (the middle of the Proposed Power Plant Site defined in **Chapter 3**: Description of the Site and its Surroundings (ES Volume I) (**Application Document Ref. 5.2**).

1.3.2 The West Burton Power Station site is located approximately 3.5km to the south-west of Gainsborough and 1km to the north-east of Sturton-le-Steeple and lies close to the junction of the A631/A620, being accessed by a C-class road (the C2), which joins the A620 at Bole Corner. The nearest settlement is the village of Bole located approximately 1km to the north-west of the Proposed Power Plant site.

1.3.3 The entire Site lies within the administrative boundary of Bassetlaw District Council (BDC), close to the border with West Lindsey District Council (WLDC) (defined by the River Trent to the east).

1.3.4 The West Burton Power Station site covers in excess of 200ha. WBA Power Station is a coal fired power station, which was commissioned in 1968. It comprises four coal fired units with two chimney stacks (each 198m high) and eight natural draught cooling towers (each 112m high), with cooling water sourced from the River Trent. It supplies up to 2,000MW of electricity to the National Grid.

1.3.5 Adjacent to the east of WBA Power Station is the WBB Power Station, a combined cycle gas turbine (CCGT) Power Station, which was commissioned in 2013. It comprises three units, each having a gas turbine, a heat recovery steam generator (HRSG) and an associated steam turbine, with a combined output capacity of 1,332MW. The WBB Power Station connects to the National Grid Transmission System approximately 0.7km to the south of the WBB Power Station site via the existing WBA 400 kilovolt (kV) substation, located within the confines of the overall West Burton Power Station site. The WBB Power Station is also served by an underground gas pipeline connection entering the WBB Power Station site at its north-eastern boundary.

1.3.6 The Proposed Power Plant Site was formerly used to deposit PFA from WBA Power Station and more recently as a construction laydown area for WBB Power Station. The area currently comprises areas of recently seeded and planted grassland, scrub and immature trees, created following the construction of WBB Power Station. The Proposed Power Plant Site is bounded:

- to the north by an access road serving Bole Ings Ash Disposal Site and beyond this, by the proposed construction laydown area;
- to the north-east by the proposed northern drainage connection corridor into the existing West Burton Power Station drainage systems;
- to the east by an area of woodland and ponds, which forms part of the West Burton Power Station Local Wildlife Site (LWS 5/2217), comprising an area of mature gravel pits of zoological interest, located within the West Burton Power Station site;
- to the south by WBB Power Station; and
- to the west by an area used for the storage of furnace bottom ash (FBA) and ash processing (authorised by Nottinghamshire County Council (NCC) application reference 1/16/01441/CDM).

1.3.7 Vegetation within the footprint of the Proposed Power Plant Site would be removed prior to construction. An alternative landscaping and biodiversity management and enhancement area would be created on suitable land within the Site boundary (refer to **Figure 2**).

1.4 The Proposed Development

1.4.1 The Proposed Development would comprise a gas fired power station with gross electrical output capacity of up to 299MW with associated buildings, structures and plant defined in the draft DCO as Work No. 1 and shown on the Works Plans (**Application Document Ref. 3.2**) as **Work No. 1: Sheet 1 of 10** including:

- up to five open cycle gas turbine (OCGT) units and associated generators, potentially housed within building(s), with stack(s), transformer(s), air inlet filter(s) and exhaust gas diffuser(s);
- associated switchgear and ancillary equipment; and
- auxiliary closed loop cooling equipment/systems.

1.4.2 In an OCGT, natural gas fuel is mixed and combusted with air from the compressor section of the gas turbine and the hot gases are expanded through the power turbine section of the turbine, which drives a generator to produce electricity for export to the National Grid electricity transmission system.

1.4.3 Peaking plants, such as that proposed, are used to rapidly supply electricity to the network when required by the National Grid. These plants can be fired up at short notice to help cope with periods of high demand or low electricity supply nationally (for example when the wind is not blowing to enable sufficient output to be achieved from the wind farms in the UK), or when required to provide ancillary services to support the National Grid. This is expected to be weighted towards the winter period, usually for a few hours at a time. However, as the operation of the plant is driven by the dynamics of the energy market, the plant could run for longer periods, at any time of day, up to the maximum allowed under its Environmental Permit, which is anticipated to be 1,500 hours per year on a rolling five year average.

1.4.4 The Proposed Development is described in further detail in the Environmental Statement (ES) (Volume I) (**Application Document Ref. 5.2, Chapter 4**: The Proposed Development).

1.5 The Purpose of this Document

1.5.1 The purpose of this document is to set out the measures proposed to mitigate the effects of the Proposed Development on landscape and biodiversity features, and to enhance the biodiversity, landscape and green infrastructure value of the Site, to secure compliance with relevant national and local planning policies.

1.5.2 The Proposed Development has been designed, as far as is practicable, to avoid or reduce effects on landscape and biodiversity features through development design

and impact avoidance. These include measures to avoid impacts on protected species to ensure compliance with legislation (see **Chapter 9**: Ecology (ES Volume I) (**Application Document Ref. 5.2**)).

1.5.3 The ecological impact assessment identified a potential significant adverse effect on great crested newts, due to the temporary and permanent loss of habitat during construction, which would mainly comprise seeded grassland, young planted trees and scrub and semi-mature plantation woodland. Habitat restoration and enhancement is required in order to compensate for the loss of habitat and maintain the favourable conservation status of the local great crested newt population, thereby avoiding a significant residual adverse effect on this species. Habitat restoration and enhancement is also required to compensate for habitat losses in order to meet local and national planning policy objectives relating to the delivery of no net loss and, where possible, net gain of biodiversity.

1.5.4 The Landscape and Visual Amenity Assessment (**Chapter 10:** Landscape and Visual Amenity (ES Volume I) (**Application Document Ref. 5.2**)) concluded that the Proposed Development would result in significant adverse effects on visual amenity at one of the assessed viewpoints (Viewpoint 4: users of public right of way (PRoW) Bole FP3B / Bole FP4 / residents at Bole)). However, the opportunity for mitigation of the visual effects of the Proposed Development is limited due to the size and scale of the Proposed Development. As shown in the assessment, the effects on visual amenity largely relate to the height of the tallest structures and as such it is considered that the addition of landscape features such as trees and woodland would not be effective in reducing the effects on visual amenity. However, there remains a need to avoid impacts on trees, for appropriate restoration of the landscape following construction, and for enhancements to the landscape character and improvements to the green infrastructure network, to meet requirements of local and national planning policy.

1.5.5 This document outlines the landscape and biodiversity impact avoidance measures that would be implemented prior to, and during, construction of the Proposed Development, as well as the habitat restoration, enhancement, management and monitoring measures to be implemented once the Proposed Development is operational. Implementation of these measures is proposed to be secured by a Requirement of the draft DCO (**Application Document Ref. 2.1**).

1.5.6 In order to avoid potential conflicts in approach to impact avoidance and enhancement, this document identifies the measures required for both landscape and biodiversity together, to demonstrate a cohesive strategy.

1.5.7 This Landscaping and Biodiversity Management and Enhancement Plan is structured as follows:

- **Section 2** summarises relevant legislation and planning policy;
- **Section 3** describes the existing landscape and biodiversity features and the potential impacts and effects of the Proposed Development;

- **Section 4** outlines the requirements for impact avoidance, both during advance works and during the construction phase;
- **Section 5** describes the proposals for landscape and biodiversity enhancement and the measures required for their effective management and maintenance. The areas of the Site to which the different proposals would be applied are illustrated in **Figure 2**; and
- **Section 6** describes the roles and responsibilities of all parties involved in the delivery of the enhancement and management proposals.

2. Legislation and Planning Policy

2.1 Overview

2.1.1 Relevant legislation and planning policy considered in formulating this Plan is listed in this section. **Appendix A** summaries the relevant legislation and planning policy in relation to the Proposed Development.

2.2 Legislation

2.2.1 The following legislation has been considered in the preparation of this Plan:

- The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018 (Ref 2);
- Wildlife and Countryside Act (WCA) 1981 (as amended) (Ref 3);
- Countryside and Rights of Way Act 2000 (as amended) (Ref 4);
- Natural Environment and Rural Communities (NERC) Act 2006 (Ref 5);
- Protection of Badgers Act 1992 (Ref 6); and
- Animal Welfare Act 2006 (Ref 7).

2.3 Planning Policy

2.3.1 Relevant national planning policy that has been considered in relation to landscape and biodiversity impact avoidance and enhancement is as follows:

- Overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 8);
- NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2) (Ref 9);
- National Planning Policy Framework (NPPF) (Ref 10); and
- European Landscape Convention (Ref 11).

2.3.2 The local planning policies that are relevant to the Site are set out in the following documents:

- Bassetlaw Core Strategy and Development Management Policies Development Plan Document for Bassetlaw – Policy DM9: Green Infrastructure; Biodiversity and Geodiversity; Landscape (Ref 12);
- Bassetlaw Landscape Character Assessment (BLCA) including Trent Washlands Regional Character Area (RCA) and Mid Nottinghamshire Farmlands RCA (Ref 13); and
- Sturton Ward Neighbourhood Plan (Ref 14).

2.4 Other Guidance

2.4.1 Other guidance that is relevant context includes:

- UK Post - 2010 Biodiversity Framework (Ref 15);
- Biodiversity 2020 – A strategy for England's wildlife and ecosystem services (Ref 16);
- Local Biodiversity Action Plan (LBAP) for Nottinghamshire (Ref 17);
- Trent and Belvoir Vales National Character Area (NCA Profile 48) (Ref 18);
- West Lindsey Landscape Character Assessment (WLLCA) (Ref 19); and
- Bassetlaw District Council Green Infrastructure Study (Ref 20).

2.5 DEFRA Pilot Biodiversity Offsetting Metric

2.5.1 In April 2012, Defra published a pilot biodiversity offsetting metric (Defra, 2012) (Ref 21) to provide an objective method for comparing losses and gains in biodiversity through development. A defined methodology is used to quantify the value of the habitats to be lost in terms of 'biodiversity units'. This defines the requirement for biodiversity unit gain through habitat creation or restoration, in order to fully compensate for the loss and achieve no net loss, or where possible, net gain of biodiversity. The required compensation may be provided either within the development boundary, or through off-site habitat creation or restoration works. Nottinghamshire was selected as one of six pilot areas nationally to trial biodiversity offsetting in 2012. A local offsetting strategy was subsequently developed to set out how the offsetting process will be managed in Nottinghamshire (Nottinghamshire County Council, 2012) (Ref 22).

2.5.2 Local and national guidance on biodiversity offsetting has been used to calculate the biodiversity losses and gains as a result of the Proposed Development as described in **Section 5** and **Appendix B** of this Plan.

3. Existing Landscape and Biodiversity Features and Development Impacts

3.1 Existing Landscape and Biodiversity Features

Habitats

3.1.1 The Proposed Power Plant Site would be located on the former construction laydown area for WBB Power Station, which now comprises a landscaped area of seeded semi-improved neutral grassland and young planted scrub and trees. Several artificial amphibian hibernacula (large piles of logs, soil and turf) have also been constructed in this area. These habitats were established in 2012 as part of the agreed habitat compensation for the loss of great crested newt habitat associated with the construction of the WBB Power Station. At the northern extent of the Proposed Power Plant Site, there is a band of semi-mature broad-leaved woodland, comprising predominantly non-native tree species.

3.1.2 The indicative construction laydown area would be located in an area to the north of the Proposed Power Plant Site. The area has blocks of planted scrub interspersed with seeded semi-improved neutral grassland and colonising tall ruderal vegetation and scattered scrub.

3.1.3 Habitats along the proposed electricity connection route to the existing 400kV WBB switchyard largely comprise seeded semi-improved neutral grassland in landscaped areas around the periphery of the WBB Power Station, with adjacent blocks of young and semi-mature plantation broad-leaved woodland.

3.1.4 The proposed northern drainage connection corridor is located along an existing access track that runs through the northern part of West Burton Power Station LWS. The corridor encompasses habitats on the edge of the track within the LWS, including dense scrub, wet woodland and small areas of reedbed swamp. Habitats along the southern drainage connection corridor include seeded semi-improved neutral grassland, hardstanding and scattered semi-mature trees, as well as dense scrub, wet woodland and part of a wet drainage ditch within West Burton Power Station LWS. **Figure 1** shows the location of the aforementioned habitats and trees.

3.1.5 The Site includes operational areas of the WBB Power Station, which comprise modern operational buildings and plant, associated infrastructure and areas of hardstanding.

3.1.6 Other notable habitats that occur outside the Site boundary, but in close proximity, include flooded gravel pits and associated wet woodland within West Burton Power Station LWS, as well as reedbeds and wet woodland within West Burton Reedbed LWS. To the north and west of the construction laydown area, there are a series of ash lagoons which comprise areas of open water and swamp (reedbed), fringed by scrub. The River Trent is located nearby to the east of the Site; this section of river is within the tidal reach and is typical of the heavily modified nature of the River Trent

in this area, with water turbid with suspended sediment, bare silt banks and an absence of in-channel or marginal vegetation. On the western bank of the River Trent, adjacent to the Site, there is a line of scattered scrub and associated tall ruderal vegetation along the top of the bank faces, with managed species-poor grassland on the landward side.

Protected/Notable Species

3.1.7 At least seven bat species were recorded foraging in the vicinity of the Site, including common, soprano and Nathusius' pipistrelles (*Pipistrellus pipistrellus, P. pygmaeus* and *P. nathusii*), noctule (*Nyctalus noctula*), Leisler's bat (*Nyctalus leisleri*), Daubenton's bat (*Myotis daubentonii*), brown long-eared (*Plecotus auritus*) and unidentified bats in the *Myotis* genus. The vast majority of bat activity recorded was by individual or small numbers of foraging common and soprano pipistrelle bats, mainly in association with woodland habitats within and adjacent to the Site. Very few potential roosting features are present in the vicinity of the Site and no bat roosting activity was recorded.

3.1.8 Small and medium sized populations of great crested newt were found in ponds located adjacent to (but outside) the Site, including the ash lagoons to the north-west, Bole Ings pond to the north and reedbeds within West Burton Reedbed LWS to the south-east. Terrestrial habitats surrounding these ponds within the Site boundary, such as grassland, scrub and woodland, are likely to be used by great crested newt for foraging, shelter and hibernation.

3.1.9 A number of Red and Amber list bird species of conservation concern were recorded in the vicinity of the Site and showed evidence of breeding, including cuckoo (*Cuculus canorus*), song thrush (*Turdus philomelos*), tree sparrow (*Passer montanus*), linnet (*Carduelis cannabina*), bullfinch (*Pyrrhula pyrrhula*), dunnock (*Prunella modularis*), willow warbler (*Phylloscopus trochilus*), reed bunting (*Emberiza schoeniclus*) and mute swan (*Cygnus olor*). These species are generally common and widespread in Nottinghamshire. Cetti's warbler (*Cettia cetti*), a bird species listed on Schedule 1 of the WCA (Ref 3), was also recorded likely to be breeding in habitats adjacent to the Site. In addition, a number of other common bird species were confirmed or likely to be breeding within or adjacent to the Site.

3.1.10 Grass snake (*Natrix helvetica*) was recorded using habitats within the Site.

3.1.11 There are records of otter (*Lutra lutra*) in the vicinity of the Site. No evidence of otter was found within any of the waterbodies, wetland areas or associated terrestrial habitats within 100m of the Site. However, given records of the species nearby, it is possible that otters take occasional refuge within, or pass through, habitats adjacent to, or in the vicinity of, the Site.

3.1.12 There are records of water vole (*Arvicola amphibius*) in the vicinity of the Site. The short section of drainage ditch that may be affected within the Site is sub-optimal for water vole and no evidence of presence was found during surveys. However, there remains a possibility that water vole could colonise this habitat, prior to construction.

3.1.13 Brown hare (*Lepus europaeus*) was recorded in association with areas of bare ground (ash roads), grassland and scrub habitats in the north of the Site.

3.1.14 Badger (*Meles meles)* was present in the vicinity of the Proposed Development. Further information on the status and distribution of badgers at the Site has not been included within this document in accordance with best practice, because badgers are potentially vulnerable to persecution.

3.2 Impacts on Landscape and Biodiversity Features

3.2.1 Construction of the Proposed Power Plant Site would result in the permanent loss of approximately 3.5ha of seeded semi-improved neutral grassland, young planted trees and scrub and semi-mature plantation broad-leaved woodland (dominated by non-native alder and poplar trees).

3.2.2 There would also be temporary impacts on habitats, including seeded semi-improved neutral grassland, scrub and semi-mature plantation woodland, during construction of the electricity connection route and construction laydown area. Construction of the northern or southern drainage connection corridor would also result in the temporary loss of up to 0.5ha of peripheral habitat within West Burton Power Station LWS. This would mostly comprise dense scrub, but small areas of reedbed, wet woodland and a short section of drainage ditch may also be affected. No impact on the hydrology of the flooded gravel pits within West Burton Power Station LWS is anticipated as a result of these works. All habitats to be temporarily impacted would be fully re-instated on completion of construction.

3.2.3 Construction and operation of the Proposed Development has the potential, in the absence of mitigation, to adversely affect all protected/notable species identified as present or potentially present in the vicinity of the Site through direct impacts (killing/injury), disturbance, habitat loss and habitat severance.

4. Impact Avoidance Requirements

4.1 Overview

4.1.1 The impact avoidance measures outlined below would be implemented, as relevant and appropriate, prior to and during construction phase, the purpose being to minimise the impact of works on landscape and biodiversity features.

4.1.2 These measures would be applied in order to meet legislative requirements for protected species, or as part of standard construction environmental best practice. The implementation of these measures has been taken into account when assessing the likely impacts and effects of the Proposed Development on landscape and biodiversity features in **Chapter 9**: Ecology (ES Volume I (**Application Document Ref. 5.2**)).

4.1.3 The impact avoidance approach allows for the retention of trees to ensure that the connectivity of the existing green infrastructure network is maintained. Enhancement proposals are included in **Section 5** of this Plan.

4.2 Updated Surveys

4.2.1 An ecologist would complete a Site walkover in advance of mobilisation/any potential advance works to re-confirm the ecological baseline conditions and identify any new ecological risks. Updated species surveys would also be undertaken to determine the status of protected species identified as present or potentially present at the Site to inform mitigation requirements and support protected species licence applications. These would be completed sufficiently far in advance of construction works to account for seasonality constraints and to allow time for the implementation of any necessary mitigation prior to construction.

4.2.2 An arboricultural survey in line with BS5837:2012 (Ref 23) would be undertaken concurrently with the detailed design, to identify where trees are likely to be affected by the construction works and to inform the development of the detailed design.

4.2.3 Existing or potential landscape and biodiversity constraints to be re-assessed during update surveys are as follows:

- bats – update roost surveys of trees adjacent to the Site;
- great crested newt – updated surveys of ponds to inform protected species licensing;
- breeding birds – nest checks of vegetation to be cleared, where necessary
- otter – updated survey for signs of presence;
- water vole – updated survey to determine continued absence in drainage ditch, where necessary;

- badger – updated survey to determine current status to inform mitigation and licensing requirements; and
- trees – updated arboricultural survey, including the production of an arboricultural report.

4.2.4 Should any new constraints be identified as a result of the updated surveys, the Landscaping and Biodiversity Management and Enhancement Plan would be updated and any additional impact avoidance or mitigation requirements would be identified in consultation with BDC and/or the relevant statutory consultees. Implementation of these measures is proposed to be secured by a Requirement of the draft DCO (**Application Document Ref. 2.1**).

4.2.5 Any additional surveys would be instructed during the advance works, site clearance and construction phases identified as necessary by the ecologist or landscape architect, based on professional judgement and the findings of the updated walkover surveys, or identified as appropriate by the Applicant or their contractor(s). These may be required, for example, based on the construction programme, working requirements or following identification of specific issues and constraints not covered by previous advice.

4.3 Protected Species Licences

4.3.1 All necessary protected species licences would be applied for and obtained prior to undertaking any works required under relevant legislation.

4.3.2 A European Protected Species Mitigation (EPSM) licence for great crested newt would be required as the Proposed Development would result in the temporary and permanent loss of suitable habitat in the vicinity of breeding ponds, and construction works have the potential for direct impacts (killing/ injury). Measures would be taken as a condition of the licence to avoid the killing/injury of great crested newts prior to, and during construction, including the erection of appropriate temporary exclusion fencing around suitable habitats and recovering newts within these areas using pitfall trapping. Existing artificial hibernacula within the Proposed Power Plant Site would be carefully dismantled by hand, under the supervision of a licensed ecological Clerk of Works. Destructive searches of other natural refugia within the Site would be completed in the same way.

4.3.3 Newts recovered during the process of trapping and destructive searches would be placed in suitable terrestrial habitat, adjacent to the Site within the West Burton Power Station site, but away from construction areas. Temporary exclusion fencing would be left in place for the duration of the construction to prevent newts dispersing into construction areas.

4.3.4 Habitat restoration and enhancement would also be required under the licence to compensate for the loss of habitat and maintain the favourable conservation status of the local population of great crested newt in the vicinity of the Site. The proposals

for habitat restoration and enhancement are included within **Section 5** of this document.

4.3.5 A badger development licence would also be required to permit works with the potential to affect (through destruction or disturbance) badger setts. The exact requirements for mitigation would be determined during pre-construction update surveys.

4.4 Clerk of Works

4.4.1 Requirements for Clerk of Works (CoW) would be advised by the ecologist and landscape architect based on relevant environmental commitments, the findings of the updated surveys, protected species licensing requirements and with reference to the relevant project programmes.

4.4.2 Immediately prior to site clearance and the start of construction in each relevant part of the Site, further site walkover surveys would be undertaken by an ecologist and landscape architect or arboriculturalist to confirm that the risks associated with the Site remain as previously assessed and/or to confirm the correct implementation of impact avoidance measures (e.g. tree protection fencing, protected species stand-offs and other protection measures).

4.4.3 The scope of the required walkovers would be defined on a case by case basis, in consultation with the project team and BDC or other statutory consultees as necessary, based on the specific risks associated with each relevant part of the Proposed Development and informed by the preceding ecological walkover described above. **Section 4.2** provides more detail on likely requirements for ecological surveys and inspections. Pre-construction surveys would be undertaken in accordance with the relevant DCO Requirements (see **Application Document Ref. 2.1**).

4.4.4 Relevant site staff would receive toolbox talks as necessary on the relevant ecological risks present, legal requirements, and the working requirements necessary to comply with legislation, and the final approved landscaping and biodiversity management and enhancement measures. Toolbox talks would be repeated as necessary over the duration of the works.

4.5 Tree Works

4.5.1 The location of the Proposed Development would largely avoid the need for the removal of mature trees. A single mature willow (*Salix* sp.) tree is present within the proposed southern drainage connection corridor and this may need to be felled if this corridor is chosen. Some pruning of mature trees may also be required along the proposed northern drainage connection corridor, but it is unlikely that any mature trees would need to be felled in this area (see **Figure 1**). No other mature trees are located within the Site.

4.5.2 Where works in close proximity to retained trees cannot be practicably avoided, these works would be undertaken in accordance with current best practice. At the time of issue of this Landscaping and Biodiversity Management and Enhancement Plan, current best practice is defined in:

- British Standard (BS) 5837: 2012 Trees in relation to design, demolition and construction – Recommendations (Ref 23); and
- National Joint Utilities Group (NJUG) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Ref 24).

4.5.3 All necessary protective fencing would be installed prior to the commencement of any site clearance or construction works, as set out in the Arboricultural Report produced following the detailed pre-construction tree surveys and to be detailed as part of the Arboricultural Method Statement.

4.6 Built Structures

4.6.1 The following impact avoidance measures in relation to built structures were highlighted as part of the Landscape and Visual Amenity Assessment (**Chapter 10**: Landscape and Visual Amenity (ES Volume I) (**Application Document Ref. 5.2**) and would be taken into consideration as part of the detailed design of the Proposed Development. Implementation of these measures would be secured by a Requirement of the draft DCO (**Application Document Ref. 2.1**):

- suitable materials would be used, where reasonably practicable, in the construction of structures to reduce reflection and glare and to assist with breaking up the massing of the buildings and structures;
- the selection of finishes for the buildings and other infrastructure, including means of enclosure, would be informed by the finishes of adjacent developments to minimise the visual impact of the Proposed Development; and
- visual clutter would be minimised, where possible, through careful design.

4.7 Precautionary Working Methods

4.7.1 The following precautionary working methods would be employed to minimise potential adverse effects on protected/notable species prior to and during construction. Precautionary working method statements would be produced as necessary to specify working requirements and other necessary impact avoidance measures. These measures would be controlled and implemented through the Construction Environmental Management Plan (CEMP) that would be developed by the contractor. This is proposed to be secured by a Requirement of the draft DCO(**Application Document Ref. 2.1**). A Framework CEMP is provided as **Application Doc Ref. 7.3**.

Nesting Birds

4.7.2 Where reasonably practicable, vegetation clearance works would be undertaken outside the bird breeding season, which is generally between March and August inclusive. Where it is not reasonably practicable to avoid the bird breeding season, an ecologist would inspect all areas of vegetation prior to clearance, and clearance would only be undertaken subject to the instruction and requirements of the ecologist to protect birds and their nests. Cleared ground would be maintained in a disturbed state in the run-up construction phase, to minimise the risk of ground nesting birds attempting to nest on cleared ground.

4.7.3 A pre-construction survey to check for breeding birds including Cetti's warbler would be undertaken in advance of construction works. If the proposed southern drainage connection corridor is chosen, or should it be necessary to undertake works associated with the third drainage option adjacent to West Burton Reedbed LWS, construction works that could cause disturbance to Cetti's warbler or other protected birds within the nearby West Burton Reedbed LWS and other adjacent habitats would be timed outside the bird breeding season.

Grass Snake

4.7.4 Measures required to prevent the killing/injury of great crested newt prior to, and during, construction (as outlined within **Section 4.3**) would also serve to prevent direct impacts on grass snakes present within the same areas. Refugia would be placed within fenced areas in order to attract grass snakes and permit their recovery and translocation into suitable adjacent habitat, prior to the start of construction works.

4.7.5 Reasonable avoidance measures would be used during clearance of any habitat suitable for grass snake located outside of areas fenced off under great crested newt licensing, to minimise the risk of direct impacts. These would include as required and where reasonably practical clearance of vegetation to reduce its suitability for grass snake, thereby encouraging animals to move away from affected areas into adjacent suitable habitat.

4.8 Animal Welfare Requirements

4.8.1 Construction excavations have the potential to trap wildlife, such as badger and otter, and result in offences under animal welfare legislation. This would be avoided through implementation of simple precautionary mitigation. All excavations deeper than 1m would be covered or fenced overnight, or where this is not practicable, a means of escape would be fitted (e.g. battered soil slope or scaffold plank), to provide an escape route should any animals stray into the construction site and fall into an excavation.

4.9 Lighting

4.9.1 Construction temporary lighting would be arranged so that glare is minimised outside the Site as far as reasonably practicable. Measures to minimise the impact of lighting are detailed in the Lighting Strategy (**Application Document Ref. 7.4**) and Framework CEMP (**Application Document Ref. 7.3**).

4.10 Habitat Restoration

4.10.1 Habitats that would be temporarily lost or damaged during construction, mainly comprising seeded semi-improved neutral grassland and scrub, would be fully reinstated where reasonably practicable on a like-for-like basis on completion of construction works.

4.10.2 Some habitats lost during construction would be restored and managed with the aim of increasing their biodiversity value in the long term. These are included within the habitat enhancement proposals detailed in **Section 5**.

4.10.3 The temporary loss and subsequent restoration of habitats is taken into account within the biodiversity offsetting calculations, together with proposals for additional enhancement. Biodiversity offsetting calculations are summarised in **Section 5.4** and **Appendix B**.

5. Landscape and Biodiversity Enhancement

5.1 Approach

5.1.1 The Landscape and Visual Amenity Assessment presented in **Chapter 10**: Landscape and Visual Amenity (ES Volume I) (**Application Document Ref. 5.2**) concluded that the Proposed Development would result in significant adverse effects on visual amenity at one of the assessed viewpoints (Viewpoint 4: users of public right of way (PRoW) Bole FP3B / Bole FP4 / residents at Bole)). However, the opportunity for mitigation of the visual effects of the Proposed Development is limited due to the size and scale of the Proposed Development. As shown in the assessment, the effects on visual amenity largely relate to the height of the tallest structures; as such it is considered that the addition of landscape features such as trees and woodland would not be effective in reducing the effects on visual amenity. However, there remains a need for appropriate restoration of the landscape following construction and for enhancements to the landscape character and improvements to the green infrastructure network to meet requirements of local and national planning policy.

5.1.2 The ecological impact assessment presented in **Chapter 9**: Ecology (ES Volume I) (**Application Document Ref. 5.2**) identified a potential significant adverse effect on great crested newts as a result of the temporary and permanent loss of habitat during construction, mainly comprising seeded grassland, young planted trees and scrub, and semi-mature plantation woodland. Habitat restoration and enhancement is, therefore, required in order to compensate for the loss of habitat and maintain the favourable conservation status of the local great crested newt population, thereby avoiding a significant residual adverse effect on this species. Habitat restoration and enhancements are also required to compensate for habitat losses in order to meet local and national planning policy objectives relating to the delivery of no net loss and, where possible, net gain of biodiversity.

5.1.3 There is limited scope for the creation of entirely new habitats in the vicinity of the Site, so the main focus has been to enhance the biodiversity value of existing habitats, or those to be restored following construction, through appropriate management works to increase native plant species diversity and improve habitat structure.

5.1.4 Proposals for landscape and biodiversity enhancement have been designed to achieve the following outcomes:

- ensure no net loss of biodiversity and generate a small net gain as a result of the Proposed Development, as calculated using the Defra offsetting metric (Ref 21) (see **Section 5.4** and **Appendix B**);
- restore and enhance habitat for the benefit of great crested newts to compensate for temporary and permanent losses of habitat to the Proposed Development;

- replace trees lost to the Proposed Development; and
- enhance the green infrastructure network adjacent to the Site.

5.2 Habitat Enhancements

5.2.1 Measures to enhance the biodiversity and green infrastructure value of existing habitats located to the north of the Site are proposed. The areas to be enhanced are shown on **Figure 2**. Existing habitats in the proposed enhancement areas are described below, to provide context to the enhancement proposals that follow and should be read in conjunction with **Figure 1**.

Existing Habitats to be Enhanced

Area 1

5.2.2 This is an irregular shaped area of habitat, adjacent to the off-site sewage treatment works operated by Severn Trent Water Limited to the north of the Site. It is currently dominated by dense semi-mature to mature hawthorn (*Crataegus monogyna*) scrub. Ground flora beneath the scrub is impoverished, due to heavy shading. There are also several pockets of reedbed swamp dominated by common reed (*Phragmites australis*) in low-lying depressions, which are fringed by willow scrub. The area is located within the boundary of West Burton Power Station LWS.

Area 2

5.2.3 Proposed construction laydown area is currently a landscaped PFA mound, comprising a mosaic of dense scrub stands (hawthorn, blackthorn (*Prunus spinosa*), rose (*Rosa* sp.), bramble (*Rubus fruticosus* agg.)) and seeded semi-improved neutral grassland. Scrub is naturally encroaching into grassland areas and without management, the area would gradually succeed to continuous scrub cover over time. Ground flora under areas of dense scrub is impoverished, due to heavy shading.

Area 3

5.2.4 This forms part of the same landscaped PFA mound as Area 2, but lies to the north of the proposed construction laydown area. It comprises a similar mosaic of planted scrub (hawthorn, rose, willow, elder (*Sambucus nigra*), bramble) and seeded semi-improved neutral grassland, though scrub cover in this area is more extensive and there are only small pockets of grassland. Without management, this area would also gradually succeed to continuous scrub cover over time.

Area 4

5.2.5 This area comprises landscaped and semi-natural habitats within Bole Round. Dense planted scrub dominated by hawthorn is present along Wheatley Beck, which grades into semi-improved neutral grassland with scattered scrub in the west. There is also a block of dense scrub of hawthorn, rose and willow located between

landscaped PFA mounds (see Area 5) and a band of mature scrub and trees (hawthorn, blackthorn, rose, birch (*Betula* sp.), willow) transitioning into semi-natural broad-leaved woodland associated with a fenceline and dry ditch along the northern boundary of the area.

Area 5

5.2.6 Two landscaped PFA mounds in the north of the Site were capped with topsoil and seeded with a neutral grassland mix following construction of the WBB Power Station as part of a Landscape and Creative Conservation Plan (Ref 25) required under Section 36 consent for the scheme (Ref 26). The grassland areas are now well established and are cut on an annual basis. The Landscape and Creative Conservation Plan covered a period of five years after establishment, which ended in 2017.

Enhancement Measures

5.2.7 The proposed enhancement measures are as follows, with the areas to which each measure would be applied set out in **Table 5-1**.

5.2.8 The proposed enhancement measures would commence during the construction phase in all areas that would not be affected by construction works (i.e. Areas 1, 3, 4 and 5). This will therefore meet EPSM licensing requirements for great crested newt and ensure that improvements in the biodiversity and green infrastructure value of habitats are delivered as soon as possible. Habitat restoration in Area 2 (construction laydown area), and other areas to be re-instated on a like-for-like basis, would commence as soon as reasonably practicable following completion of construction works in these areas.

5.2.9 The biodiversity management and enhancement area will be managed and maintained for ten years, with a review after five years to potentially integrate the management and maintenance into the existing arrangements for the West Burton site.

Scrub Management

5.2.10 Selective removal and pruning of scrub would be undertaken to thin out dense areas and create small glades. This would allow more light to penetrate the retained stands, which would promote more basal growth, leading to improved structure and form. It would also create more edge habitat and reduce the dominance of a single species (i.e. hawthorn). More light would reach the ground, which would encourage natural colonisation by ground flora. Where appropriate, glades would be seeded with a species-rich grassland seed mix. These measures would enhance the condition, structure and diversity of existing scrub habitats, which in turn, would benefit fauna such as invertebrates, nesting birds, foraging bats and grass snakes.

5.2.11 New scrub planting would be implemented to diversify current stands and improve their age structure. Species of local provenance would be used (as identified in the

Trent Washlands RCA and Mid Nottinghamshire Farmlands RCA (Ref 14)), including the following:

- blackthorn;
- buckthorn (*Rhamnus cathartica*);
- dogwood (*Cornus sanguinea*);
- guelder rose (*Viburnum opulus*);
- hazel (*Corylus avellana*);
- holly (*Ilex aquifolium*);
- wild privet (*Ligustrum vulgare*);
- dog rose (*Rosa canina*); and
- osier (*Salix* sp.*)* (wet areas).

5.2.12 All scrub planting would be notch planted into cultivated ground at 1.5m and 2.5m spacings and supported by an appropriate timber stake and shrub shelter (all fitted as per manufacturer's recommendations).

5.2.13 Periodic management would be undertaken to prevent scrub spreading into open areas/glades and succeeding to continuous scrub cover. Regeneration would be managed to promote diversity and a varied age structure within areas of scrub, whilst maintaining open areas, glades and edge habitat. Undesirable species such as injurious weeds and invasive non-native plant species would be removed or treated, as necessary.

5.2.14 All new scrub planting would be subject to the draft maintenance regimes described in **Appendix C**, in which all plants found to be dead or dying within the initial five year aftercare period would be replaced within the first available planting season. Following the completion of the initial five year aftercare period all new planting plots will undergo an annual condition assessment and an appropriate programme of works developed to address changes in condition and site requirements. Such work may include; additional replacement planting, tube/stake removal, pruning, coppicing, or thinning out of plots to encourage establishment.

5.2.15 The measures would be applied to the re-instatement/ongoing management of scrub habitat within Areas 1, 2, 3 and 4 to enhance its biodiversity value.

Reedbed Management

5.2.16 Small areas of reedbed present in low-lying depressions in Area 1 would be managed to improve their habitat structure and diversity. Areas of reedbed lost or damaged during construction of the northern drainage connection corridor (if chosen) would naturally regenerate over time and would then be managed in the same way.

5.2.17 A proportion of each of reedbed area would be cut every other year to maintain a mosaic of vegetation at different stages of growth. Arisings would be removed to prevent the build-up of plant material in order to prevent drying out. Sensitive de-silting would also be undertaken every 3 to 5 years if required to help maintain water levels and continued value for wildlife. Cutting and removal of different areas of reeds and de-silting requirement would be reviewed after the initial five year period and amended accordingly for the duration of the Plan.

5.2.18 Scrub encroachment into reedbed areas would be managed by coppicing or fully removing scrub to prevent succession to Carr Woodland. Undesirable species such as injurious weeds and invasive non-native plant species would also be removed or treated, as necessary.

5.2.19 As described in **Appendix A**, reedbeds are an LBAP habitat and the proposals would make a small contribution to LBAP targets for maintaining and improving the condition of reedbed habitat in Nottinghamshire.

Grassland Enhancement

5.2.20 Existing areas of seeded semi-improved neutral grassland in Area 5 would be managed to increase the diversity of grass and herbaceous plant species of local provenance. The aim would be to create areas of LBAP-quality lowland neutral grassland habitat.

5.2.21 A botanical survey will be undertaken to inform the baseline condition assessment of Area 5 and the results provided in the Landscaping and Biodiversity Management and Enhancement Plan, secured by Requirement 6 of the draft DCO (**Application Document Ref. 7.5**) prior to seeding. A bespoke grassland seed mix will be used, the composition of which would be matched as closely as possible to the composition of local species-rich grasslands.

5.2.22 The ground in areas to be enhanced would be prepared in advance of seeding. The existing grass sward would be cut short and the surface of the soil would be scarified to create bare earth patches.

5.2.23 The grassland areas would then be subject to low intensity hay meadow management, including:

- the grassland would be cut to 15cm height in late autumn following seeding to reduce late summer growth of grasses;
- if the grass re-grows vigorously over the first winter following seeding, a second cut to 15cm height would be taken in February to reduce competition for germinating target species;
- spot treatment of weeds would also be undertaken in the first spring after seeding, and may need to be repeated periodically within the first few years of establishment (the frequency of treatments would be reviewed as part of the five year Plan review);

- Cut and collect would be taken annually in late summer, after plants have set seed. All arisings would be removed from the area; and
- the grass cutting would be used within the wider West Burton Power Station site to create habitat piles; this would benefit the grass snake population as it would provide compost material for egg laying.

5.2.24 The establishment of species-rich grassland would be monitored by undertaking a Condition Assessment walkover survey every two years in the first five years following seeding. The frequency of surveys would then be reviewed as part of the five year Plan review and amended if necessary. These surveys would assess whether the grassland is developing as intended and whether any additional seeding or changes in management are required to achieve the desired species-rich sward.

5.2.25 The botanical enhancement and management of existing grassland areas to create lowland neutral grassland habitat would contribute to LBAP targets for the expansion of this priority habitat type set out in **Appendix A**.

Hibernacula and Habitat Piles

5.2.26 Several artificial amphibian hibernacula currently present within the Proposed Power Plant Site would need to be dismantled and removed prior to construction (under the EPSM licence). These hibernacula would be re-constructed to the same specification within habitats to be enhanced in the vicinity of the ash lagoon ponds (outside construction areas) to provide refuge and hibernation sites for great crested newts.

5.2.27 Additional habitat piles and hibernacula would be constructed throughout the enhancement areas using natural materials generated during clearance of the Site, such as logs, turf and grass strimmings. These would provide additional refuge and hibernation opportunities for newts and grass snakes, as well as dead wood habitat for invertebrates, which would in turn benefit fauna such as bats and birds.

Tree Planting

5.2.28 Groups of trees would be planted to compensate for the loss of areas of plantation woodland and individual trees during construction. The total number or area of trees planted would be at least equivalent to the number or area of trees lost as a consequence of the Proposed Development.

5.2.29 New trees would be planted in areas where they would complement existing habitats and contribute to the enhancement of green infrastructure. The most appropriate location for new tree planting within the enhancement areas is considered to be along the band of scrub and trees at the northern boundary of Area 4. New groups of trees planted in this area would broaden this narrow wooded corridor linking wet woodland and fen habitats on the east and west sides of Bole Ings LWS, providing enhanced habitat connectivity.

5.2.30 Native species of local provenance would be used (as identified in the Trent Washlands RCA and Mid Nottinghamshire Farmlands RCA (Ref 14)) including:

- Ash (*Fraxinus excelsior*);
- pedunculate oak (*Quercus robur*);
- English elm (*Ulmus minor*);
- wych elm (*Ulmus glabra*);
- wild cherry (*Prunus avium*);
- crab apple (*Malus sylvestris*);
- field maple (*Acer campestre*);
- crack willow (*Salix fragilis*); and
- white willow (*Salix alba*).

5.2.31 All new trees would be notch planted at 2m centres with a random distribution into cultivated ground. All planting would also be supported by an appropriate timber stake and tree shelter, fitted as per manufacturer's recommendations.

5.2.32 All new tree plantings would be subject to the maintenance regimes described in **Appendix C**, in which all plants found to be dead or dying would be replaced within the first available planting season. If areas of trees are seen to be failing, soil samples may be needed to identify potential soil issues affecting tree health. Either soil remediation would be required or, if not practical, a more suitable tree species or location would be chosen. Following the completion of the initial five year aftercare period all new planting plots will undergo an annual condition assessment and an appropriate programme of works developed to address changes in condition and site requirements. Such work may include; additional replacement planting, tube/stake removal, pruning, coppicing, or thinning out of plots to encourage establishment.

Table 5-1: Habitat Enhancement Measures to be Applied (Refer to Figure 2)

Enhancement	Area 1	Area 2	Area 3	Area 4	Area 5
Scrub Management	✓	✓	✓	✓	
Reedbed Management	✓				
Grassland Enhancement					✓
Habitat Piles	✓	✓	✓	✓	
Tree Planting				✓	

5.3 Habitat Creation Principles Supporting Delivery of Biodiversity Enhancement

5.3.1 Where new native habitats are to be created, or new native planting undertaken, the following principles would apply:

- all seed mixes and planting stock would be ordered as early as reasonably practicable to ensure that supply can be met without risk of substitution;
- all seed mixes and tree and shrub stock would be sourced from a specialist producer of British native plants who can source-identify all stock (i.e. not a non-specialist nursery that buys in stock or an agricultural/general merchant that buys stock from diverse sources, including non-British sources);
- native trees and shrubs would be sourced from a supplier which follows the Forestry Commission's Voluntary Identification Scheme for British Native Trees and Shrubs (Ref 27);
- grassland wildflower mixtures would be approved by the Department for Environment, Food and Rural Affairs (Defra) under the Seed (Registration, Licensing and Enforcement) (England) Regulations 2002 (Ref 28); and
- terms of supply would include a condition that no part of the order shall be substituted with stock of alternative species or origin and that any change must be mutually agreed.

5.3.2 The above requirements would be incorporated into contractor specifications and contracts, as appropriate, to deliver genuinely native plantings in accordance with the biodiversity objectives of this Plan.

5.4 Biodiversity Offsetting

5.4.1 The results of the biodiversity offsetting calculations are summarised in **Table 5-2**. The full calculations and the rationale behind them, including assigning habitat type, distinctiveness and condition, and applying risk multipliers, are included in **Appendix B**.

5.4.2 A conservative approach has been used within the calculations to account for uncertainties regarding timeframes and impacts prior to the detailed design stage. For example, in calculating the biodiversity value of existing habitats to be lost, it has been assumed that all habitats within the Site, excluding enhancement areas, would either be lost or damaged. In addition, when estimating the time lag for like-for-like restoration of habitats, it has been assumed that this would take place at the end of the construction phase; however, in many cases habitat restoration would be completed sooner than this, where individual elements of the Proposed Development are completed in a shorter timeframe.

5.4.3 When estimating the time taken for habitats in enhancement areas (outside construction areas) to reach target condition, it has been assumed that habitat

management works would commence during construction, in order that improvements in biodiversity value can be achieved as soon as possible.

5.4.4 Protected species are not included within the Defra offsetting metric, because there is an existing legal process in place to mitigate impacts.

Table 5-2: Summary of Biodiversity Offsetting Calculations

Habitat	Area (ha)	Biodiversity Units
Habitats to be lost during construction		
Plantation broad-leaved woodland	0.54	4.32
Semi-improved neutral grassland	5.91	42.80
Scrub	1.07	4.28
Wet Woodland	0.15	2.70
Reedbed	0.08	0.96
Wet Ditch	0.03	0.24
Total units lost		**55.30**
Habitats to be restored like-for-like following construction		
Semi-improved neutral grassland	1.91	7.71
Scrub	0.64	1.51
Wet Woodland	0.15	1.35
Wet Ditch	0.03	0.17
Habitats enhancements		
Area 1		
Scrub management	0.51	2.91
Reedbed management	0.14	0.70
Area 2		
Scrub re-instatement	1.20	8.47
Area 3		
Scrub management	2.44	6.97
Area 4[1]		
Scrub management	1.00	5.71
Tree planting	2.89	5.78

[1] [1] The total area of proposed habitat enhancements in Area 4 (3.89ha) does not cover the entire area of land within Area 4 as shown on Figure 2 (6.9ha). This accounts for uncertainties at this stage about the most optimal locations for enhancements in this area, such as tree planting, and provides for flexibility in the locations of enhancement measures to achieve the best outcomes for biodiversity.

Habitat	Area (ha)	Biodiversity Units
Area 5		
Grassland management	6.56	21.87
Total units gained		**63.16**
Net change in biodiversity units		**+7.86**

5.4.5 The biodiversity offsetting metrics demonstrate that with the implementation of the proposed restoration and enhancement measures, there would be no net loss of biodiversity, and a small net gain, as a result of the Proposed Development.

6. Roles and Responsibilities

6.1 The Applicant and/or the Appointed Main Contractor

6.1.1 The Applicant and/or appointed main contractor would be responsible for:

- correct instruction of all parties contributing to delivery of the final approved Landscaping and Biodiversity Management and Enhancement Plan (including but not restricted to the Applicant's staff and their appointed ecologists, landscape architects, landscape contractors, construction contractors and management organisations);
- compliance with the final approved Landscaping and Biodiversity Management and Enhancement Plan, relevant legislation and any relevant planning commitments;
- keeping the appointed ecologist/landscape architect/arboriculturalist informed of work activities that require support and supervision, so that it is clear when attendance at Site is required;
- enacting/enforcing recommendations made by the ecologist/landscape architect/arboriculturalist, or otherwise agreeing an appropriate alternative course of action, if it is subsequently determined that previous advice is not practicable or is out of date; and
- keeping a record of measures taken to deliver the requirements of the final Landscaping and Biodiversity Management and Enhancement Plan, to provide an auditable record of compliance.

6.2 The Appointed Ecologist

6.2.1 The appointed ecologist would be responsible for:

- advising the Applicant on ecological matters and requirements for compliance with relevant legislation and protected species licences, providing support as instructed, and monitoring compliance with the final approved Landscaping and Biodiversity Management and Enhancement Plan;
- reviewing the Landscaping and Biodiversity Management and Enhancement Plan at appropriate intervals and revising management requirements as necessary for the following five year period and subsequently for the duration of the Plan; and
- providing the Applicant with survey reports and other written evidence required in accordance with the agreed scope of work and contractual obligations.

6.3 The Appointed Landscape Architect/Arboriculturalist

6.3.1 The appointed landscape architect/arboriculturalist would be responsible for:

- providing specialist site supervision in the form of walkover assessments relating to relevant landscape areas. This would be to assess landscape components and their condition and identify the need for landscape enhancement as instructed and in accordance with the agreed scope of work and contractual obligations, once the power station is operational;
- monitoring and assessing the landscape related elements of the approved Landscaping and Biodiversity Management and Enhancement Plan for their effectiveness on an annual basis for the first five years following commencement of operation of the Proposed Development and then for the following five year period and subsequently for the duration of the Plan;
- ensuring that the landscape related elements of the approved Landscaping and Biodiversity Management and Enhancement Plan are reviewed at the end of the five year initial monitoring and assessment stage and amended accordingly for the following five year period and subsequently for the duration of the Plan. The Landscaping and Biodiversity Management and Enhancement Plan shall be amended accordingly to suit any changing landscape conditions and ultimately inform the maintenance operations throughout the operational life of the Proposed Development; and
- ensuring that any reviews associated with landscape related elements of the approved Landscaping and Biodiversity Management and Enhancement Plan clearly identifies any changes to site conditions and circumstances, whether the aims and objectives of the approved Plan are being met, and where identified changes are needed to existing management practices and timeframes.

7. References

Ref 1 HM Government (2008) *The Planning Act 2008.*

Ref 2 HM Government (2018) *The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018*

Ref 3 HM Government (1981) *Wildlife and Countryside Act 1981*.

Ref 4 HM Government (2000) *Countryside and Rights of Way Act 2000*.

Ref 5 HM Government (2006) *Natural Environment and Rural Communities Act 2006*.

Ref 6 HM Government (1992) *Protection of Badgers Act 1992*.

Ref 7 HM Government (2006) *Animal Welfare Act 2006*

Ref 8 Department for Energy and Climate Change (2011) *National Policy Statement for Energy (EN-1).*

Ref 9 Department for Energy and Climate Change (2011) *National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2).*

Ref 10 Ministry of Housing, Communities and Local Government (2019) *National Planning Policy Framework*.

Ref 11 Council of Europe (2000) *European Landscape Convention.*

Ref 12 Bassetlaw District Council (2011) *Bassetlaw District Core Strategy and Development Policies DPD.*

Ref 13 Bassetlaw District Council (2009) *Landscape Character Assessment – Bassetlaw, Nottinghamshire.*

Ref 14 Sturton Ward Planning Group (2015) *The Sturton Ward Neighbourhood Plan 2015-2030.*

Ref 15 Joint Nature Conservation Committee and Defra (2012) *UK Post-2010 Biodiversity Framework.*

Ref 16 Department for Environment, Food and Rural Affairs (2011) *Biodiversity 2020, A Strategy for England's Wildlife and Ecosystem Services.*

Ref 17 Taylor, J.K. (ed). (1998) *Local Biodiversity Action Plan for Nottinghamshire. Nottinghamshire County Council.*

Ref 18 Natural England (2013) *Natural Character Area Profile: 48. Trent and Belvoir Vales.*

Ref 19 Environmental Resources Management (ERM) (1999) *West Lindsey Landscape Character Assessment.*

Ref 20 Bassetlaw District Council (2010) *Green Infrastructure Study*.

Ref 21 Defra (2012) *Biodiversity Offsetting Pilots – Technical Paper: the metric for the biodiversity offsetting pilot in England*. Defra, London.

Ref 22 Nottinghamshire County Council (2012) *A Local Offsetting Strategy for Nottinghamshire 1st Edition.*

Ref 23 British Standard (BS) 5837: 2012 *Trees in relation to design, demolition and construction.*

Ref 24 National Joint Utilities Group (NJUG) *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.*

Ref 25 Bassetlaw District Council Planning (2012) *52/12/00001 | To Implement Parts Of A Scheme Of Landscape And Creative Conservation Works In Association With Construction Of West Burton B Power Station West Burton Power Station | Areas 1 Area 1B And Area 2 West Burton Power Station North Road West Burton Nottinghamshire.*

Ref 26 Department for Business Enterprise and Regulatory Reform (2007) *West Burton B Section 36 Consent Information.*

Ref 27 Forestry Commission (2007) *Forest Reproductive Material*.

Ref 28 UK Government (2002) *The Seed (Registration, Licensing and Enforcement) (England) Regulations 2002.*

Ref 29 Natural England (2010) *Higher Level Stewardship: Farm Environment Plan (FEP) Manual (NE264).*

Figures

Appendix A : Legislation and Planning Policy Context

Table A1: Summary of Relevant Legislation

Statute	Relevant Legal Requirements
The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018	The 2018 Regulations amend The Conservation of Habitats and Species Regulations 2017, the Neighbourhood Planning (General) Regulations 2012, the Town and Country Planning (Permission in Principle) Order 2017 and the Town and Country Planning (Brownfield Land Register) Regulations 2017, they came into force on the 28 December 2018. The Habitats Regulations require the compilation and maintenance of a register of European sites, to include Special Area Conservations (SACs) and Special Protection Areas (SPAs) classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). When considering potentially damaging operations, the precautionary principle applies i.e. consent for the operations cannot be given unless it is demonstrated that there would be no adverse effect on the integrity of the European site. The Regulations also afford protection to European Protected Species, e.g. bats and great crested newt, listed in Schedule 2. It is an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in listed animals. In certain circumstances, licences can be granted to permit some actions prohibited under the Habitats Regulations. Regulation 9A requires that competent authorities must take such steps in the exercise of their functions as they consider appropriate to secure the preservation, maintenance and re-establishment of sufficient diversity and area of habitat for wild birds as appropriate, and having regard to the requirements of Article 2 of the Birds Directive.
Wildlife and Countryside Act 1981 (as amended) (WCA)	Part 1 of the WCA affords general protection to all species of wild bird and specific protection to flora and fauna listed in Schedules 1 (birds protected by special penalties), 5 (other animals), and 8 (flora, fungi and lichens). It is an offence (subject to exceptions) to: • kill, injure, or take any wild bird; • take, damage or destroy the nest of any wild bird while that nest is in use or being built; • take or destroy an egg of any wild bird; • disturb any wild bird listed on Schedule 1 of the WCA while nesting, or disturb the dependent young of such a bird (e.g. quail); • kill, injure or take any wild animal listed on Schedule 5 (e.g. bats, great crested newt, common lizard);

Statute	Relevant Legal Requirements
	• damage, destroy or obstruct places used for shelter or protection by wild animals listed on Schedule 5 and covered by Part 4A of the WCA (e.g. bats and great crested newt); • intentionally disturb wild animals listed in Schedule 5, and covered by Part 4A of the WCA, that are occupying places of shelter and protection (e.g. bats and great crested newt); and • pick, uproot or destroy any plant, fungi or lichen listed in Schedule 8. In certain circumstances, licences can be granted to permit some actions prohibited under the WCA. Schedule 9 provides lists of non-native flora and fauna that it is an offence to release or cause to spread in the wild. Of primary relevance in the context of proposed developments are flora e.g. invasive non-native plant species. Part 2 of the WCA details the law regarding SSSIs and other protected areas within Great Britain.
Countryside and Rights of Way Act 2000 (CRoW)	Schedule 9 of the CRoW amends SSSI provisions of the Wildlife and Countryside Act 1981, including increased powers for their protection and management of SSSIs. These strengthened provisions extend powers for entering into management agreements; place a duty on public bodies to further the conservation and enhancement of SSSIs; increase penalties on conviction where the provisions are breached; and introduce a new offence whereby third parties can be convicted for damaging SSSIs. Schedule 12 of the CRoW amends the species provisions of the WCA, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', and create a new offence of reckless disturbance.
Natural Environment and Rural Communities Act 2006 (NERC)	The NERC places a duty on Government Departments and public authorities to have regard for the conservation of biodiversity. Section 41 includes a list of habitats and species to be used by decision-makers, including local authorities, to guide the implementation of their duties under section 40 of the NERC to have regard to the conservation of biodiversity in England, when carrying out their normal functions.
Protection of Badgers Act 1992	Makes it an offence to kill or take a badger, to cruelly ill-treat a badger, or to interfere with a badger sett, including disturbing a badger while it is occupying a sett. In certain circumstances, licences can be granted to permit some actions prohibited under the Act.
Animal Welfare Act 2006	The Act contains the general laws relating to animal welfare. It is an offence to cause unnecessary suffering to any animal. The Act makes

Statute	Relevant Legal Requirements
	owners and keepers (including landowners) responsible for ensuring that the welfare of animals within their control is met.

Table A2: Summary of Relevant National and Local Planning Policy and Other Guidance

Document	Relevant Policies (where applicable)	Details
Overarching National Policy Statement (NPS) for Energy (EN-1)	Part 5.3: Biodiversity and geological conservation Part 5.10: Land use including open space, green infrastructure and Green Belt	Paragraph 5.3.4 requires evidence to show how the Proposed Development 'has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests'. Paragraph 5.3.15 states that 'Development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design. When considering proposals, the IPC should maximise such opportunities in and around developments'. Paragraph 5.10.20 details requirements where green infrastructure is affected. It states that 'the IPC should consider imposing requirements to ensure the connectivity of the green infrastructure network is maintained in the vicinity of the development and that any necessary works are undertaken, where possible, to mitigate any adverse impact and, where appropriate, to improve that network and other areas of open space'.
NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2)	Part 2.6.5: Infrastructure Planning Commission Decision Making	With respect to visual impacts and landscape mitigation, EN-2 paragraph 2.6.5 states that '*It is not possible to eliminate the visual impacts associated with a fossil fuel generating station. Mitigation is therefore to reduce the visual intrusion of the buildings in the landscape and minimise impact on visual amenity as far as reasonably practicable'*. The design should provide the best fit with the existing local landscape and to minimise the impact through use of appropriate external finishes and colour choice and to enclose low level buildings and structures to reduce impacts from nearby receptors.
National Planning	-	The NPPF was published in 2019 , replacing earlier

Document	Relevant Policies (where applicable)	Details
Policy Framework (NPPF)		versions published in July 2018, and March 2012. Whilst regard has been made to the NPPF policies set out below, paragraph 5 of the NPPF is clear that it does not contain specific policies for NSIPs and these are to be determined in accordance with the decision-making framework set out in the 2008 Act and relevant NPSs, as well as any other matters that are 'relevant (which may include the NPPF)'. In respect of conserving and enhancing the natural environment, paragraph 170 of the NPPF states that 'planning policies and decisions should contribute to and enhance the natural and local environment' and can do so by 'minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.'
European Landscape Convention	-	The United Kingdom ratified the European Landscape Convention in 2006. While it has not been incorporated into UK law, its principles are reflected in Government and local planning policies. This includes expectations that local communities are engaged in the setting of priorities and objectives for their local landscapes, and that opportunities are sought to align conservation and landscape objectives for designated areas. The NPPF outlines strong protection of designated landscapes and the duty on decision-makers to consider landscape impacts in plan making and planning decisions. The UK Government considers the NPPF compliant with the convention.
Bassetlaw Core Strategy and Development Management Policies Development Plan Document (DPD)	DM9: Green Infrastructure; Biodiversity; Geodiversity; Landscape; Open Spaces and Sports Facilities	To ensure that development proposals support the Council's strategic approach to the delivery, protection and enhancement of multi-functional Green Infrastructure. To safeguard habitats and species populations by requiring that development proposals do not adversely affect or result in the loss of ecological features of importance, including protected trees and hedgerows, ancient woodlands, statutory and non-statutory nature conservation designations, and

Document	Relevant Policies (where applicable)	Details
		protected/notable habitats and species. Green Infrastructure; Biodiversity and Geodiversity; Landscape; Open Space and Sports Facilities states that 'new development will need to integrate with the character of the surrounding area and take full account of landscape character at all stages in the planning and delivery process, recognising opportunities for habitat creation'. Additionally, it states that new development is also 'expected to enhance the distinctive qualities of the landscape character policy zone in which they would be situated, as identified in the Bassetlaw Landscape Character Assessment'. BDC is currently in the early stages of preparing a new Local Plan for the District and began consulting on a Draft Bassetlaw Local Plan in January 2019. Strategic objective 5 (Conserve the District's distinctive historic built and natural environments) states: *"The variety of distinctive historic and natural environments throughout Bassetlaw will be conserved and, where possible, enhanced for the enjoyment of future generations of residents and visitors alike. This will include making the most efficient use of land wherever appropriate."*
Bassetlaw Landscape Character Assessment (BLCA)	Mid Nottinghamshire Farmlands RCA, Policies 1-12 Trent Washlands RCA, Policies 17-50	The Site lies within two Regional Character Areas (RCA) as defined by the BLCA - Trent Washlands RCA and Mid-Nottinghamshire Farmlands RCA. Within the Trent Washlands RCA, the power stations of West Burton and Cottam and their associated overhead power lines are considered by the BLCA to be the most dominant and visually intrusive landscape features within this area. The Mid-Nottinghamshire Farmlands RCA is considered by the BLCA to be an undulating landscape of predominantly rural, agricultural character. The study area lies within several Policy Zones as defined by the BLCA. These are Trent Washlands 23, 24, 25 and 49 and Mid-Nottinghamshire

Document	Relevant Policies (where applicable)	Details
		Farmlands 02, 03 and 05, which are adjacent to the Site. Distinctive and defining characteristics of these landscape areas are provided in ES **Chapter 10**: Landscape and Visual Amenity, Volume I, **Application Document Ref. 5.2**).
Sturton Ward Neighbourhood Plan	Policy 2: Conservation and Enhancement of Existing Natural Features Policy 3: Design Principles and 4: Protecting the Historic Environment	Policy 2 seeks to protect and enhance designated wildlife sites and retain features of high conservation value including mature trees, hedgerows, species-rich grasslands, ponds and wetlands, and woodlands. The policy also introduces or safeguards boundary treatments that are sympathetic to maintaining and enhancing biodiversity on new development or as part of alterations to existing development. Incorporating native species of tree and shrub and provision of bat boxes is particularly encouraged. Policy 3: Design Principles states: "*New development will be supported where it demonstrates:* *- layouts that maximise opportunities to integrate development with the existing settlements through creating new connections and improving existing ones to and from new development;* *- consideration of local character in terms of street types, building detailing, colours, shapes and materials, landscaping and relationships between public and private spaces and how these might be used; and* *- designs that draw up and reflect local character including building design, mass, and the use of traditional and vernacular materials."* Policy 4: Protecting the Historic Environment states that: *"Planning applications will be supported where*

Document	Relevant Policies (where applicable)	Details
		they preserve or enhance conservation areas, listed buildings and other heritage assets." Part B sets out general design principles, stating that *'individual development proposals… will only be accepted where they are of a high quality design'* that address local character and distinctiveness, architectural quality, public realm, accessibility, amenity and carbon reduction
UK Post-2010 Biodiversity Framework	-	This covers the period 2011-2020 and forms the UK Government's response to the UN Convention on Biological Diversity held in Nagoya in 2010. Following publication of the Framework, most of the strategic biodiversity work previously enacted under the UK Biodiversity Action Plan was delegated to each of the four countries comprising the United Kingdom of Great Britain and Northern Ireland. The Framework shows how the work of the four UK countries joins up to achieve the international biodiversity targets agreed under the UN Convention, as well those required under the European Union biodiversity strategy.
Biodiversity 2020: A strategy for England's wildlife and ecosystem services	-	This sets out the strategic approach to be taken in biodiversity planning in England over the period 2010 to 2020.
Local Biodiversity Action Plan (LBAP) for Nottinghamshire (published 1998)	-	Provides the local nature conservation strategy for identifying threats to habitats and species within the county and setting out the actions necessary to conserve them. Although now somewhat out of date, the LBAP provides context to inform identification of threatened/uncommon habitats and species within the county. The LBAP identifies priorities for conservation and enhancement but confers no particular legislative or policy protection to the habitats and species identified (though in some

Document	Relevant Policies (where applicable)	Details
		cases this is provided through related legislation and policy).
Trent and Belvoir Vales National Character Area (NCA) (Profile 48)	-	National Character Areas were developed by Natural England to provide a description of the landscape area and other details such as the topography, geology and soils, field patterns and boundary features, agricultural uses, semi-natural habitats and species closely associated with the area. The NCAs describe areas that share similar landscape characteristics, and which follow natural landscape boundaries rather than administrative boundaries. The Trent and Belvoir Vales NCA is characterised by undulating, strongly rural and predominantly arable farmland, centred on the River Trent, with relatively little woodland cover.
West Lindsey Landscape Character Assessment (WLLCA)	-	The study area lies within one Landscape Character Area (LCA) as defined by the WLLCA - Trent Valley LCA. Trent Valley LCA is described as low-lying and gently undulating with power stations along the River Trent and associated major transmission lines dominating views to the west. Distinctive and defining characteristics of this landscape area is provided in **Chapter 10**: Landscape and Visual Amenity, ES Volume I, **Application Document Ref. 5.2**).
Bassetlaw District Council Green Infrastructure Study	-	This provides a long-term vision for green infrastructure to ensure that no net loss of green infrastructure occurs, and addresses maintenance and improvement of green infrastructure and connectivity between the district's urban and rural areas.

Appendix B: Biodiversity Offsetting Metrics

Table B1: Rationale for distinctiveness and condition scores applied to habitats to be lost and habitats to be enhanced

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
Habitats to be lost during construction				
Plantation broad-leaved woodland	Medium IHS Label: WB1 Mixed Woodland	4	Moderate Fails on 1 condition assessment criteria for T06 (Mixed woodland): 1. This should be an area of trees with complete canopy cover (pass) 2. The woodland must be free from damage (in the last five years) by stock or wild mammals (pass) 3. There should be no evidence of machinery storage, signage or other inappropriate management (fail – the woodland areas to be affected are not managed and comprise dense stands of even-aged, non-native trees, with limited understorey shrubs and an impoverished ground flora)	2
Semi-improved neutral grassland (open areas of the Proposed Power Plant Site)	Medium IHS Label: GNZ Other neutral grassland	4	Moderate The species composition of the sward is characteristic of semi-improved grassland (G02) (Key 2a, Farm Environment Plan (FEP) handbook (Ref 29)). There are no condition assessment criteria for this habitat type. The grassland in open areas of the Proposed Power Plant Site is fairly well managed and is less diverse than the marginal areas that have a higher coverage of wildflowers; the overall condition is considered to be moderate.	2

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
Semi-improved neutral grassland (beneath young planted trees and shrubs in Proposed Power Plant Site and elsewhere, as well as within construction laydown area)	Medium IHS Label: GNZ Other neutral grassland	4	Moderate The species composition of the sward is characteristic of semi-improved grassland (G02) (Key 2a, FEP handbook (Ref 29)). There are no condition assessment criteria for this habitat type. The grassland beneath trees and shrubs is rank and has a reduced coverage of wildflowers. Grassland within the construction laydown area is subject to scrub encroachment in many areas. As a result these grasslands are considered to be in moderate condition.	2
Semi-improved neutral grassland (regularly managed areas)	Medium IHS Label: GNZ Other neutral grassland	4	Poor The species composition of the sward is characteristic of semi-improved grassland (G02) (Key 2a, FEP handbook (Ref 29)). There are no condition assessment criteria for this habitat type. The grassland in regularly managed areas is kept relatively short and has a much reduced wildflower content. Therefore, it is considered to be in poor condition.	1

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
Scrub	Medium IHS Label: WB2 Scrub woodland	4	Poor Fails on 2 or more condition assessment criteria for V05 (Scrub of high environmental value): 1. There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be 100% cover) (fail – areas of scrub to be lost are dominated by hawthorn) 2. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs (fail – scrub stands to be lost are relatively uniform in age) 3. Pernicious weeds and invasive species make up less than 5% of the ground cover (pass) 4. The scrub has a well-developed edge with un-grazed tall herbs (pass) 5. There are many clearings and glades within the scrub (pass)	1
Wet woodland	High IHS Label: WB34 Wet woodland	6	Good Meets all condition assessment criteria for T08 (Native semi-natural woodland): 1. Native species are dominant. Non-native and invasive species account for less than 10% of the vegetation cover (pass) 2. A diverse age and height structure (pass) 3. Free from damage (in the last five years) from stock or wild mammals – there should be evidence of tree regeneration such as seedlings, saplings and young trees (pass) 4. Standing and fallen dead trees of over 20cm diameter are present (pass) 5. The area is protected from damage by agricultural and other adjacent operations (pass)	3

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
Reedbed	High IHS Label: EM11 Reedbeds	6	Moderate Fails on 1 condition assessment criteria for W08 (Reedbeds): 1. Cover of scrub within the reedbed should be less than 10% (fail – scrub is encroaching into reedbed areas) 2. The vegetation should include at least 60% reeds (pass) 3. Surface water is present over at least part of the reedbed for most of the year (pass) 4. Cover of undesirable species (common nettle, docks, creeping/spear thistles, common ragwort and Indian (Himalayan) balsam) should be less than 10% (pass)	2
Wet ditch	Medium IHS Label: AS4 Eutrophic standing water	4	Moderate Fails on 1 condition assessment criteria for F02 (High environmental value boundaries (ditches)): 1. Water levels in the ditch must be no more than 45 cm below the mean field level and the water must have a minimum depth of 30cm throughout the year (fail – water levels in the ditch fluctuate and the depth is less than 30cm for at least part of the year) 2. Cover of macro-algae is less than 30% in the summer (pass) 3. The following species together make up less than 75% of the vegetation cover: common duckweed, fennel pondweed and yellow water-lily (pass) 4. The following species make up less than 10% of the vegetation cover: New Zealand pygmyweed, floating pennywort, waterfern and parrot's feather (pass) 5. Less than 20% of the ditch is in heavy shade (unless the ditch is adjacent to a hedge or within a woodland) and more than 25% has a gently sloping profile or berms and shelves (pass)	2
Habitats to be enhanced				

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
Area 1				
Scrub	Current: Medium IHS Label: WB2 Scrub woodland	4	Current condition: Poor Fails on 2 or more condition assessment criteria for V05 (Scrub of high environmental value): 1. There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be 100% cover) (fail – scrub within Area 1 is dominated by hawthorn) 2. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs (fail – scrub within Area 1 is mature and even-aged) 3. Pernicious weeds and invasive species make up less than 5% of the ground cover (pass) 4. The scrub has a well-developed edge with un-grazed tall herbs (pass) 5. There are many clearings and glades within the scrub (pass – reedbeds within this area create clearings)	1
	Target: Medium IHS Label: WB2 Scrub woodland	4	Target condition: Good Scrub management proposals would aim to create habitat that meets all condition assessment criteria for V05 (Scrub of high environmental value), as listed above.	3
Reedbed	Current: High IHS Label: EM11 Reedbeds	6	Current condition: Moderate Fails on 1 condition assessment criteria for W08 (Reedbeds): 1. Cover of scrub within the reedbed should be less than 10% (fail – scrub is encroaching into reedbed areas) 2. The vegetation should include at least 60% reeds (pass) 3. Surface water is present over at least part of the reedbed for most of the year (pass) 4. Cover of undesirable species (common nettle, docks, creeping/spear thistles, common ragwort and Indian (Himalayan) balsam) should be less than 10% (pass)	2

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
	Target: High IHS Label: EM11 Reedbeds	6	Target condition: Good Reedbed management would aim to maintain existing reedbeds such that they meet all condition assessment criteria for W08 (Reedbeds), as listed above.	3
Area 2				
Scrub	Current: not applicable – this is the construction laydown area and all habitats would be removed	-	Current condition: not applicable – this is the construction laydown area and all habitats would be removed.	-
	Target: Medium IHS Label: WB2 Scrub woodland	4	Target condition: Good Scrub re-instatement and management in this area would aim to create habitat that meets all condition assessment criteria for V05 (Scrub of high environmental value): 1. There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be 100% cover) (pass) 2. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs (pass) 3. Pernicious weeds and invasive species make up less than 5% of the ground cover (pass) 4. The scrub has a well-developed edge with un-grazed tall herbs (pass) 5. There are many clearings and glades within the scrub (pass)	3
Area 3				

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
Scrub	Current: Medium IHS Label: WB2 Scrub woodland	4	Current condition: Moderate Fails on 1 condition assessment criteria for V05 (Scrub of high environmental value): 1. There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be 100% cover) (pass) 2. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs (pass) 3. Pernicious weeds and invasive species make up less than 5% of the ground cover (pass) 4. The scrub has a well-developed edge with un-grazed tall herbs (pass) 5. There are many clearings and glades within the scrub (fail – scrub has spread into former open areas)	2
	Target: Medium IHS Label: WB2 Scrub woodland	4	Target condition: Good Scrub management proposals would aim to create habitat that meets all condition assessment criteria for V05 (Scrub of high environmental value), as listed above.	3
Area 4				

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
Scrub	Current: Medium IHS Label: WB2 Scrub woodland	4	Current condition: Poor Fails on 2 or more condition assessment criteria for V05 (Scrub of high environmental value): 1. There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be 100% cover) (fail – scrub within Area 4 is dominated by hawthorn) 2. There is a good age range – a mixture of seedlings, saplings, young shrubs and mature shrubs (fail – scrub within Area 4 is even-aged) 3. Pernicious weeds and invasive species make up less than 5% of the ground cover (pass) 4. The scrub has a well-developed edge with un-grazed tall herbs (pass) 5. There are many clearings and glades within the scrub (fail – scrub is mostly dense / continuous)	1
	Target: Medium IHS Label: WB2 Scrub woodland	4	Target condition: Good Scrub management proposals would aim to create habitat that meets all condition assessment criteria for V05 (Scrub of high environmental value), as listed above.	3

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
Tree planting	Current: Medium IHS Label: GNZ Other neutral grassland. Tree planting would be undertaken in areas currently comprising semi-improved neutral grassland	4	Current condition: Moderate The species composition of the sward is characteristic of semi-improved grassland (G02) (Key 2a, FEP handbook (Ref 29)). There are no condition assessment criteria for this habitat type. The grassland in areas proposed for tree planting is generally rank and has a reduced coverage of wildflowers. Therefore, it is considered to be in moderate condition.	2
	Target: Medium IHS Label: WB1 Mixed Woodland	4	Target condition: Good Groups of planted trees would be managed such that they meet all condition assessment criteria for T06 (Mixed woodland) in the long term: 1. This should be an area of trees with complete canopy cover (pass) 2. The woodland must be free from damage (in the last five years) by stock or wild mammals (pass) 3. There should be no evidence of machinery storage, signage or other inappropriate management (pass)	3
Area 5				
Semi-improved neutral grassland	Current: Medium IHS Label: GNZ Other neutral grassland	4	Current condition: Good The species composition of the sward is characteristic of semi-improved grassland (G02) (Key 2a, FEP handbook (Ref 29)). There are no condition assessment criteria for this habitat type. The grassland is subject to annual low-level management and has a good coverage of wildflowers. Therefore, it is considered to be in good condition.	3

Phase 1 Habitat Type	Distinctiveness*	Score	Condition**	Score
	Target: High IHS Label: GN1 Lowland meadows	6	Target condition: Good Grassland seeding and management would aim to increase the proportion and diversity of wildflowers in the sward to create LBAP quality lowland neutral grassland that meets all condition assessment criteria for G06 (Lowland meadows): 1. Cover of undesirable species (creeping thistle, spear thistle, curled dock, broad-leaved dock, common ragwort, common nettle, marsh ragwort, cow parsley and bracken) less than 5% (pass) 2. Cover of wildflowers and sedges throughout the sward (excluding the undesirable species listed above and creeping buttercup and white clover) more than 20% (pass) 3. Cover of bare ground (including localised areas, for example, rabbit warrens) less than 10% (pass) 4. Cover of invasive trees and shrubs less than 5%, and indicators of water logging (such as large sedges, rushes, reeds) less than 30% (pass) 5. At least two indicator species are frequent and two occasional (pass)	3

* based on Defra biodiversity offsetting guidance (Ref 21), with reference to the local offsetting strategy for Nottinghamshire (Ref 22)

** based on condition assessment criteria in the Farm Environment Plan Handbook (Ref 29).

Table B2: Calculation of the biodiversity value of habitats to be lost during construction

Habitats to be lost	A Area (ha)^	B Distinctiveness Score	C Condition Score	Biodiversity Units A x B x C
Plantation broad-leaved woodland	0.54	4	2	4.32
Semi-improved neutral grassland (open areas of Proposed Power Plant Site)	1.18	4	2	9.44
Semi-improved neutral grassland (beneath young planted trees and shrubs in Proposed Power Plant Site and elsewhere, as well as within construction laydown area)	3.61	4	2	28.88
Semi-improved neutral grassland (regularly managed areas)	1.12	4	1	4.48
Scrub	1.07	4	1	4.28
Wet Woodland	0.15	6	3	2.70
Reedbed	0.08	6	2	0.96
Wet Ditch	0.03	4	2	0.24
			Total biodiversity units lost	**55.30**

^ habitat areas are approximate and taken from Phase 1 Habitat mapping presented in **Figure 1**.

Table B3: Calculation of the biodiversity value of habitats to be restored like-for-like following construction

Habitats to be restored like-for-like	A Area (ha)^	B Distinctiveness Score	C Condition Score	Risk Multipliers*			Biodiversity Units Gained (AxBxC) / (DxExF)
				D Difficulty[1]	E Spatial[2]	F Time lag[3]	
Semi-improved neutral grassland (beneath planted trees/shrubs)	0.79	4	2	1	1	1.4	4.51
Semi-improved neutral grassland (regularly managed areas)	1.12	4	1	1	1	1.4	3.20
Scrub	0.64	4	1	1	1	1.7	1.51
Wet Woodland	0.15	6	3	1	1	2	1.35
Wet Ditch	0.03	4	2	1	1	1.4	0.17
Total biodiversity units gained through like-for-like habitat restoration							**10.74**

^ habitat areas are approximate

* based on Defra biodiversity offsetting guidance (Ref 22) (Defra, 2012).

[1] takes into account the difficulty in creating or restoring different habitats

[2] takes into account risks associated with the location of offsets. There is no spatial risk in relation to the like-for-like restoration of habitats

[3] takes into account how long it is likely to take for the restored/newly created habitat to achieve target condition

Table B4: Calculation of the biodiversity value of habitats enhancements

Enhancements	A Area (ha)^	Existing Habitat			Enhanced Habitat			Risk Multipliers*			Biodiversity Units Gained (G-D) / (HxIxJ)
		B Distinctiveness Score	C Condition Score	D Biodiversity Units (AxBxC)	E Distinctiveness Score	F Condition Score	G Biodiversity Units (AxExF)	H Difficulty[1]	I Spatial[2]	J Time lag[3]	
Area 1											
Scrub management	0.51	4	1	2.04	4	3	6.12	1	1	1.4	2.91
Reedbed management	0.14	6	2	1.68	6	3	2.52	1	1	1.2	0.70
Area 2											
Scrub re-instatement	1.2	-	-	-	4	3	14.40	1	1	1.7	8.47
Area 3											
Scrub management	2.44	4	2	19.52	4	3	29.28	1	1	1.4	6.97
Area 4											
Scrub management	1	4	1	4	4	3	12.00	1	1	1.4	5.71
Tree planting	2.89	4	2	23.12	4	3	34.68	1	1	2.0	5.78
Area 5											
Grassland management	6.56	4	3	78.72	6	3	118.08	1.5	1	1.2	21.87

Enhancements	A Area (ha)^	Existing Habitat			Enhanced Habitat			Risk Multipliers*			Biodiversity Units Gained (G-D) / (HxIxJ)
		B Distinctiveness Score	C Condition Score	D Biodiversity Units (AxBxC)	E Distinctiveness Score	F Condition Score	G Biodiversity Units (AxExF)	H Difficulty[1]	I Spatial[2]	J Time lag[3]	
Total biodiversity units gained through habitat enhancement											**52.42**

^ habitat areas are approximate

* based on Defra biodiversity offsetting guidance (Ref 22) .

[1] takes into account the difficulty in creating or restoring different habitats

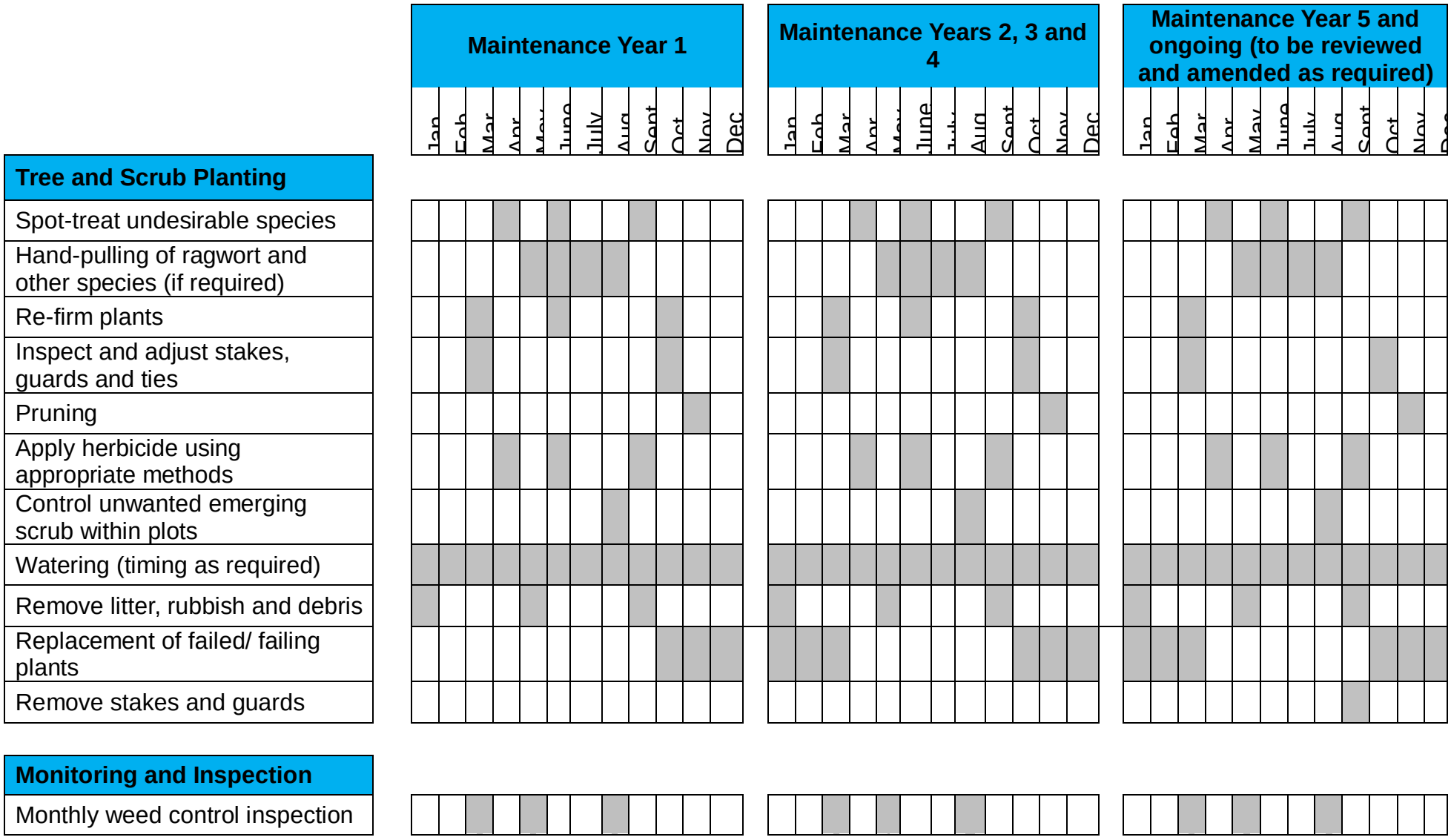
[2] takes into account risks associated with the location of offsets. In this case, as the enhancements are all being provided on site and would contribute to local ecological networks, a multiplier of 1 has been used (i.e. there is no spatial risk)

[3] takes into account how long it is likely to take for the restored/newly created habitat to achieve target condition

Appendix C: Maintenance Regimes

The landscape and biodiversity management and enhancement area will be managed and maintained for 10 years, with a review after 5 years to potentially integrate the management and maintenance into the existing arrangements for the West Burton site.

Landscape Element Type	Maintenance Year 1												Maintenance Years 2, 3 and 4												Maintenance Year 5 and ongoing (to be reviewed and amended as required)											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Grassland																																				
Remove litter, rubbish and debris	■				■				■				■				■				■				■				■				■			
Spot-treat undesirable species				■		■			■							■		■			■							■		■			■			
Green hay harvesting, spreading and rolling/seed sowing							■	■																												
Establishment cuts (may occur pre-practical completion)					■	■	■				■																									
Subsequent cuts (*)																			■												■					
Removal of arisings (*)					■	■	■				■										■												■			
Harrowing to remove thatch (*)																					■	■	■										■	■	■	
Control emerging scrub							■												■												■					
Reedbed																																				
Rotational cutting of reedbed (Year 1, 3 and 5)										■	■											■	■											■	■	
De-silting (every 3 – 5 years as required)									■	■	■										■	■	■										■	■	■	


Maintenance Year 1
Maintenance Years 2, 3 and 4
Maintenance Year 5 and ongoing (to be reviewed and amended as required)
Jan
Feb
Mar
Apr
May
June
July
Aug
Sept
Oct
Nov
Dec
Tree and Scrub Planting
Spot-treat undesirable species
Hand-pulling of ragwort and other species (if required)
Re-firm plants
Inspect and adjust stakes, guards and ties
Pruning
Apply herbicide using appropriate methods
Control unwanted emerging scrub within plots
Watering (timing as required)
Remove litter, rubbish and debris
Replacement of failed/ failing plants
Remove stakes and guards
Monitoring and Inspection
Monthly weed control inspection

	Maintenance Year 1												Maintenance Years 2, 3 and 4												Maintenance Year 5 and ongoing (to be reviewed and amended as required)											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Annual inspection of all planted areas to record failed or defective plants									■												■												■			
Monitoring of landscaped areas to assess species diversity and establishment				■												■												■								
Annual Condition Assessment survey of grassland (Year 1, 3 and 5)						■	■											■	■											■	■					

(*) Consideration of the potential for traditional aftermath grazing by livestock would also be given in the longer term to replace cutting.