Tables

9. Ecology

9.1 Introduction

9.1.1 This chapter of the Environmental Statement (ES) addresses the potential effects of the construction, operation (including maintenance) and decommissioning of a gas fired generating station on the site of the West Burton Power Station near Gainsborough, Nottinghamshire (the Proposed Development) on ecology. The assessment considers:

- the present-day and future baseline conditions during construction and at opening;
- the effects of construction of the Proposed Development on habitats and species, with respect to construction traffic, construction dust and the Proposed Development footprint;
- the effects of the operation of the Proposed Development on habitats and species; and
- the potential effects of the eventual decommissioning of the Proposed Development.

9.1.2 The cumulative effects of emissions associated with the Proposed Development and other committed developments in the vicinity are described in **Chapter 16**: Cumulative and Combined Effects.

9.1.3 This chapter is supported by the following technical appendices and figures, located in ES Volume II and III respectively:

- **Appendix 9A** – Legislation and Planning Policy;
- **Appendix 9B** – Ecological Impact Assessment Methodology;
- **Appendix 9C** – Preliminary Ecological Appraisal;
- **Appendix 9D** – Confidential Badger Survey Report;
- **Appendix 9E** – Great Crested Newt Survey Report;
- **Appendix 9F** – Reptile Survey Report;
- **Appendix 9G** – Bat Survey Report;
- **Appendix 9H** – Breeding Bird Survey Report;
- **Appendix 9I** – Riparian Mammal Survey Report; and
- **Figure 9.1** – Landscaping and Biodiversity Management and Enhancement Areas.

9.2 Legislation, Planning Policy and Guidance

9.2.1 The ecological impact assessment (EcIA) presented in this chapter has been undertaken within the context of relevant planning policies, guidance documents and legislative instruments. A summary is provided below and further details are provided in **Appendix 9A:** Legislation and Planning Policy (ES Volume II).

Legislative Background

9.2.2 The following legislation is considered relevant to the Proposed Development:

- Wildlife and Countryside Act (WCA) 1981 (as amended) (Ref 9-1);
- Countryside and Rights of Way (CRoW) Act 2000 (as amended) (Ref 9-2);
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended) (Ref 9-3);
- The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018 (the Habitats Regulations) (Ref 9-4);
- Protection of Badgers Act 1992 (Ref 9-5);
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (WFD) (Ref 9-6); and
- Animal Welfare Act 2006 (Ref 9-7).

Planning Policy Context

National Planning Policy

9.2.3 The overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 9-8) sets out national policy for energy infrastructure. Those parts of the NPS relevant to biodiversity are detailed in **Table 9-1~~Table 9-1~~Table 9-1**, which includes cross references to where the issues have been addressed in the chapter.

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Table 9-1: Summary of NPS advice relevant to biodiversity

Summary of NPS	Consideration within the Chapter
Paragraph 5.3.3 states: *"Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity."*	**Section 9.6**

Summary of NPS	Consideration within the Chapter
Paragraph 5.3.4 states: *"The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests."*	**Sections 9.5** and **9.7**
Paragraph 5.3.7 states: *"As a general principle, and subject to the specific policies below, development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives (as set out in Section 4.4 above); where significant harm cannot be avoided, then appropriate compensation measures should be sought."*	**Sections 9.5** and **9.7**
Paragraph 5.3.18 states*: "The applicant should include appropriate mitigation measures as an integral part of the proposed development. In particular, the applicant should demonstrate that:* • *during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works;* • *during construction and operation best practice will be followed to ensure that risk of disturbance or damage to species or habitats is minimised, including as a consequence of transport access arrangements;* • *habitats will, where practicable, be restored after construction works have finished; and* • *opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals."*	**Sections 9.5** and **9.7** and **Application Document Ref. 7.5**: The Landscaping and Biodiversity Management and Enhancement Plan

National Planning Policy Framework

9.2.4 In the revised National Planning Policy Framework (NPPF) published in February 2019 (Ref 9-9), the UK Government set out its commitment to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the wider commitment to halt the overall decline in biodiversity. It specifies the obligations that local authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation, and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species. Where impacts are unavoidable, compensation may be required.

9.2.5 Paragraph 177 states: *"The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."*

Local Development Plan Policy

9.2.6 Local planning policy relevant to ecology and nature conservation is set out in the Bassetlaw Core Strategy and Development Management Policies Development Plan Document (DPD) (Ref 9-10). Policy DM9 sets out Bassetlaw District Council (BDC) approach to assessing planning applications to ensure that development proposals safeguard habitats and species populations. The policy supports the strategic approach of BDC to the delivery, protection and enhancement of multi-functional 'green infrastructure' (GI), defined as a strategic network of multi-functional green space, both rural and urban, which supports natural and ecological processes and is integral to the health and quality of life in sustainable communities.

9.2.7 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 (Ref 9-11) 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."

9.2.8 The Sturton Ward Neighbourhood Plan (Ref 9-12) is used to assess planning applications submitted within the Parish in which the Site is located and contains policies to guide new development in relation to nature conservation objectives. The policy states that development will be permitted where it fulfils all the relevant criteria listed. Criteria cover aspects including protection and enhancement of designated wildlife sites, retention of features of high conservation value including mature trees, hedgerows, species rich grasslands, ponds and wetlands and woodlands. Maintaining and enhancing biodiversity on new development or alterations to existing development is also encouraged.

Other Guidance

9.2.9 In July 2012, the UK Post-2010 Biodiversity Framework was published (Ref 9-13). 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 (Ref 9-14) was delegated to each of the four countries comprising the United Kingdom. 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.

9.2.10 In England, the strategic approach to be taken in biodiversity planning over the period 2010 to 2020 is set out in '*Biodiversity 2020, A strategy for England's wildlife and ecosystem services*' (Ref 9-15). These country strategies replace the UK Biodiversity Action Plan, with the associated lists of priority habitats and species carried over into the newly defined lists of habitats and species of principal importance for nature conservation in England, contained within Section 41 of the NERC Act. This latter list encompasses 56 habitats and 943 species.

9.2.11 The Local Biodiversity Action Plan (LBAP) for Nottinghamshire (Ref 9-16) is a nature conservation strategy identifying threats to habitats and species within the county and setting out the actions necessary to conserve them through a series of Habitat Action Plans (HAPs) and Species Action Plans (SAPs). **Appendix 9A:** Legislation and Planning Policy (ES Volume II) provides further details and screening of priority habitats and species of potential relevance to the Proposed Development.

9.2.12 Standing advice has been published by Natural England and the Department for Environment, Food and Rural Affairs (Defra) to guide decision-makers on the determination of proposals with the potential to affect designated sites, species and habitats. The guidance sets out responsibilities and minimum requirements for survey and mitigation, including the need to engage with objectives for no net loss of biodiversity and provision of biodiversity net gain.

9.3 Assessment Methodology and Significance Criteria

Consultation

9.3.1 Consultation undertaken during the preparation of this ES chapter, including a summary of comments raised *via* the formal Scoping Opinion (**Appendix 1B**: Scoping Opinion (ES Volume II)) and in response to the formal consultation, is summarised in **Table 9-2~~Table 9-2~~~~Table 9-2~~**.

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Table 9-2: Consultation summary table

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
Natural England	19 May 2017 (email response to Scoping Opinion)	General advice confirming the requirement to consider impacts on statutory and non-statutory nature conservation designations and protected and notable habitats and species. The assessment should be undertaken in accordance with published best practice guidance.	The assessment has been completed in line with these recommendations.
Nottinghamshire County Council (NCC)	9 May 2017 (email response to Scoping Opinion)	Satisfied with the overall scope of the Environmental Impact Assessment (EIA) from an ecological perspective.	Comment only, no response required.
		Assessments of indirect impacts, such as noise, air quality and artificial lighting, should consider non-statutory designations (i.e. Local Wildlife Sites) as well as statutory designations (Sites of Special Scientific Interest).	The assessment includes consideration of indirect impacts on non-statutory and statutory designations.
		The Defra biodiversity offsetting metric should be used to calculate direct habitat loss arising from the development, so that requirements for on-site mitigation (and potentially offsite compensation) can be determined objectively and transparently, with the aim of delivering no net loss (and ideally net gain) of habitat.	The current iteration of the Defra biodiversity ~~offsetting~~ metric (The Biodiversity Metric 2.0; ~~Natural England, 2019~~Ref 9-19) has been used to quantify the loss of biodiversity as a result of the Proposed Development, and to determine the requirement for habitat restoration/ creation~~,~~ to ensure

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
			no net loss and ~~small~~ net gain of biodiversity. ~~Full~~ Further details are provided in the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).
Marine Management Organisation	24 May 2017 (email response to Scoping Opinion)	All impacts of the construction of the cooling water infrastructure, along with any other activities within the UK marine area, on marine ecology should be taken into account.	The proposed outfall options presented in the Preliminary Environmental Information (PEI) Report are now excluded from the Proposed Development. No impacts on marine ecology are therefore predicted.
Environment Agency	25 May (letter response to consultation on EIA Scoping Report)	It might be beneficial for a Preliminary Ecological Appraisal to be submitted rather than or alongside the Phase 1 Habitat Survey.	A Preliminary Ecological Appraisal of the Site has been completed and is included with the application (see **Appendix 9C:** Preliminary Ecological Appraisal (ES Volume II)).
		We would recommend the applicant also looks into whether a Water Framework Directive assessment is required for the proposed development.	Screening to determine the need for WFD assessment was undertaken at formal consultation stage, when potential outfalls to the River Trent were under consideration, and presented in the PEI Report. A WFD Screening Matrix is not included as part of the ES given that outfalls to the River Trent are no longer proposed and there

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
			would be no impacts on WFD status and objectives of the River Trent (see **Chapter 12**: Flood Risk, Hydrology and Water Resources).
Bassetlaw District Council	5 June 2017 (email response to consultation on EIA Scoping Report)	No comments.	No response required.
West Lindsey District Council	24 May 2017 (letter response to consultation on EIA Scoping Report)	All regionally and locally important sites (including non-statutory sites) and Section 41 (NERC Act 2006) Habitats and Species of Principal Importance within 2km of the site should be assessed. Consideration should also be given to species and habitats within any relevant Local Biodiversity Action Plan (LBAP).	Statutory and non-statutory nature conservations and protected and notable species within 2km of the Site have been considered in the assessment. LBAP habitats and species have also been considered where relevant.
		Mitigation should consider opportunities for biodiversity creation and enhancement.	Proposals for biodiversity creation and enhancement are outlined in **Section 9.7** and illustrated on **Figure 9.1** (ES Volume III). Full details are provided in the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).
RSPB	12 September 2017 (response to formal	RSPB has advised that the Trent Valley holds small but regionally important numbers of	The proposed enhancement measures set out in The Landscaping and

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
	consultation on PEI Report)	fast-declining turtle doves. They have noted that the proposed mitigation measures should help to retain turtle doves in the area and support breeding success, but have asked that turtle doves are specifically addressed in the ecological mitigation plan with habitat management options designed to help them. The RSPB is satisfied there is unlikely to be any impact from these proposals on RSPB Beckingham Marshes nature reserve.	Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**) will provide suitable nesting habitat for turtle doves.
Nottinghamshire County Council (NCC)	11 October 2017 (response to formal consultation on PEI Report)	NCC deems the scope of surveys being conducted to be appropriate. However, they have requested clarification as to whether specific water vole surveys will be completed.	Water vole surveys have been completed (see **Appendix 9I:** Riparian Mammal Survey Report (ES Volume II)).
		The screening of impacts set out appears appropriate; the development design and impact avoidance measures outlined as incorporated mitigation appear generally appropriate, but will need to be examined in more detail when the precise details of the scheme are better established (e.g. outflow options).	The impact avoidance measures set out in **Section 9.5** have been updated following design changes.

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
		A commitment to using the ~~DEFRA~~ Defra biodiversity offsetting metric (an ecological accounting approach) as part of the assessment process, and to ensuring no net loss of biodiversity as a result of the development, is welcomed and supported. NCC have advised it will be necessary to check the intended restoration of the areas referred to within Bole Round, as it is understood that this area was to be restored to species rich grassland, if this is the case then an additional area would need to be found for the purpose of this application.	The areas within Bole Round were previously restored to species-rich grassland as a condition of the Section 36 Consent for West Burton B Power Station. It is intended to enhance the biodiversity value of these areas for the purposes of this Application by managing the grassland to increase botanical diversity (see **Section 9.7** and the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).
		NCC have drawn attention to the fact that within the boundaries of the proposed site for WBC, is a habitat which was created as part of the ecological mitigation required during the construction of WBB. NCC suggests that consideration should be given to the possibility of any future developments impinging on areas which have been earmarked for ecological mitigation.	The loss of the area of habitat created under WBB Power Station Landscape and Creative Conservation Plan will be compensated for by enhancing other habitats nearby (see **Section 9.7** and the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**). No future developments are currently planned on the areas proposed for ecological enhancement.
		NCC dispute the statement that the loss of great crested newt habitat is not significant	The assessment of impacts on great crested newt has been amended to

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
		(and therefore does not require specific mitigation), given that the habitat was created in the first place as compensation for the impacts of West Burton B. They have asked that the relationship between the two schemes and the status of the great crested newt habitat will need to be carefully considered in the ES.	acknowledge the potential for a significant effect in the absence of compensatory habitat provision and management. See **Section 9.7** and **Section 9.9**. The relationship between the two schemes is considered within **Sections 9.6** and **9.7**.
Environment Agency	11 October 2017 (response to formal consultation on PEI Report)	The Environment Agency is satisfied that the relevant ecological aspects of the development have been adequately addressed. They have asked that the final ES include enhancement plans in addition to the mitigation plans.	Ecological enhancement proposals (including plans) are set out within the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).
Natural England	16 October 2017 (response to formal consultation on PEI Report)	Natural England acknowledges that the assessment has followed their advice at the scoping stage to consider impacts on statutory and non-statutory nature conservation designations, and protected and notable habitats and species and has been undertaken in accordance with published best practice guidance.	Comment only, no response required.
		Natural England acknowledges that given there is no potential for effects on international statutory designations, the	Comment only, no response required. A HRA No Significant Effects Report (NSER) is provided as **Application Document Ref 4.3**.

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
		proposed development does not require Habitats Regulations Assessment (HRA).	
		Natural England has advised that the proposed great crested newt mitigation would need to be agreed with them prior to the submission of the application for development consent.	The Applicant has undertaken further engagement with Natural England (meeting 6 November 2017) to discuss comments raised on the PEI Report. Further engagement will continue prior to the submission of a licence application.
		Natural England has advised that it may be necessary to appoint an Ecological Clerk of Works during the construction phase of the development.	The need for an Ecological Clerk of Works during the construction phase has been added to the Impact Avoidance measures in **Section 9.5** and further detail is presented in Section 4.4 of the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).
		Natural England are pleased that the proposals have been designed to ensure no net loss of biodiversity and that the Defra offsetting metric has been used in the calculation. However, they advise that wherever possible, developments should result in a net gain of biodiversity to comply with the guidance set out in the NPPF.	The proposed enhancement measures result in a ~~small~~ net gain of biodiversity (see the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
Nottinghamshire Wildlife Trust (NWT)	15 October 2017 (response to formal consultation on PEI Report)	NWT has concerns that the habitats secured for mitigation for the adverse impacts of WBB Power Station should now be proposed to be lost in order to accommodate West Burton C. This undermines both the commitments made in, and conditions imposed on, the previous permission and would lead to an overall loss and degradation of the current habitat resource of the site on which key species depend.	The loss of habitat as a result of the Proposed Development would be offset by enhancing other habitats in order to deliver a ~~small~~ net gain of biodiversity, in accordance with ~~Defra~~ The ~~b~~Biodiversity ~~offsetting m~~Metric 2.0 (Ref 9-19)~~s~~. Habitat enhancement proposals are outlined in **Section 9.7** and detailed in the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).
		NWT notes that proposed enhancements in the Bole Ings area may at least already partially have been required under the consent for the Bole Ings ash disposal permission.	These areas were previously restored to species-rich grassland as a condition of the Section 36 Consent for West Burton B Power Station. It is intended to diversify these areas of grassland beyond that which was previously agreed via the WBB Power Station Landscape and Creative Conservation Plan in order to further enhance their biodiversity value (refer to **Section 9.7** and the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
		NWT notes that the proposed routing of the northern and southern outfall options would both result in damage to West Burton Power Station Local Wildlife Site (LWS), and suggests that it would take longer than the 5-10 years stated in the PEI Report for habitats to be fully replaced. NWT notes that the report has not properly considered the increased fragmentation of the remaining LWS that would result from these habitat losses.	The proposed outfall options to the River Trent have now been removed from the Proposed Development, but drainage connection corridors may still be required, broadly in the same locations, albeit not extending to the River Trent. The drainage connection corridors would have similar impacts on LWS habitats. The period required to fully replace the main habitat to be lost (scrub) has now been stated as approximately 10 years (see **Section 9.6**). The effect of fragmentation has now been considered in the impact assessment (see **Section 9.6**).
		NWT has advised that the proposed compensation for the loss of habitat should be clearly quantified and defined.	Proposed enhancement measures are detailed in the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**) which uses Defra biodiversity offsetting metrics to quantify the value of habitats lost to the Proposed Development, as well as the value of the proposed enhancements.

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
		NWT has advised that, with regard to NO_X emissions, the process contribution and degree of change in nitrogen deposition for LWS should be clearly stated in the ES ecology chapter.	Air quality impacts on LWS have been included in **Section 9.6**. Further information is presented in **Chapter 6**: Air Quality and **Appendix 6A**: Air Quality Technical Appendix.
		NWT has requested that evidence is supplied detailing how the great crested newt mitigation would be achieved, and whether the mitigation measures which were implemented for WBB have been successful.	Details on how the proposed enhancement measures would benefit great crested newts are provided in **Section 9.7**. Further information is also provided in this section to clarify the status of areas that have previously been restored under existing permissions.
		NWT has requested that the partially complete ecological surveys are completed and the results interpreted accordingly. Additionally, they have requested that overwintering bird surveys are conducted.	All ecological surveys have been fully completed and the results are reported in **Appendices 9C – 9I** (ES Volume II). The need for overwintering bird surveys was scoped out following completion of the Preliminary Ecological Appraisal (PEA) (**Appendix 9C** (ES Volume II)) due to an absence of suitable habitat within the Site.
		NWT has advised that outfall options would have to comply with the Eel Regulations and that a more comprehensive assessment of changes in water quality and	The proposed outfall options to the River Trent are no longer being pursued as part of the Proposed Development and therefore no impacts

Consultee or organisation approached	Date and nature of consultation	Summary of response	How comments have been addressed in this chapter
		temperature are required to be conducted to assess the potential impacts on species such as eel and salmon.	on fish or other aquatic species are anticipated.
		NWT has suggested that the bat population is of County value, rather than Local as assessed in the PEI Report.	The value of the bat species assemblage has been increased to County, following re-assessment using LWS selection criteria and completion of the final bat surveys. This has been accounted for in **Appendix 9G** (ES Volume II) and in this chapter.
Bassetlaw District Council Environment Agency Lincolnshire County Council Natural England Nottinghamshire County Council West Lindsey District Council	March/April 2019	Provision of copies of final draft chapter and offer of pre-application meeting to each consultee to: • discuss final proposals and assessments; • obtain feedback prior to submission of Application; and • agree an approach to drafting of Statements of Common Ground (SoCG) prior to submission of the Application. Further details on consultation undertaken can be found in the Consultation Report (**Application Document Ref. 7.1**).	

Summary of Key Changes to Chapter 9 since Publication of the Preliminary Environmental Information (PEI) Report

9.3.2 The PEI Report was published for statutory consultation in September 2017, allowing consultees the opportunity to provide informed comment on the Proposed Development, the assessment process and preliminary findings through a consultation process prior to the finalisation of this ES.

9.3.3 The key changes since the PEI Report was published are summarised in **Table 9-3~~Table 9-3~~~~Table 9-3~~** below.

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Table 9-3: Summary of key changes to Chapter 9 since publication of the PEI Report

Summary of change since PEI Report	Reason for change	Summary of change to chapter text in the ES
The possibility of installing an outfall to the River Trent was presented in the PEI Report. Following consultation and further engineering design works, the potential surface water outfall options are now excluded from the Proposed Development and therefore the proposed Order Limits, draft DCO and associated documentation exclude the need for a direct discharge to the River Trent.	Updated design information regarding the feasibility of discharge of surface water on Site to the existing drainage system of West Burton A power station. Discharge to the River Trent from the wider West Burton Power Station site will continue via the existing outfall structure and the rate of discharge will be controlled via the surface water drainage system to ensure that pre-development 'greenfield' runoff volumes are not exceeded.	Removal of impact avoidance measures relating to the River Trent in **Section 9.5**. Scoping out of impacts on the River Trent and removal of proposed fish impact assessment in **Section 9.6**.
Information provided on the biodiversity enhancements proposed as part of the Proposed Development.	Biodiversity enhancement proposals have been identified and a Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**) has been prepared.	The proposed biodiversity enhancements are outlined in **Section 9.7** and further detail is provided within the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**)

Summary of change since PEI Report	Reason for change	Summary of change to chapter text in the ES
The nature conservation value of the bat species assemblage at the Site has been increased from Local value to County value.	Following comments on the PEI Report from NWT and analysis of bat data collected since publication of the PEI Report.	Amended valuation in **Sections 9.4 and 9.6**.
The assessment of impacts on great crested newt has been amended to acknowledge the potential for a significant effect in the absence of compensatory habitat provision and management.	Following comments on the PEI Report from NCC.	Amended impact assessment text in **Section 9.6.** Additional details in **Section 9.7** to demonstrate that proposed enhancements deliver compensatory habitat for great crested newt.
Construction phase assessment year updated for road traffic related emissions.	To reflect updated indicative construction programme.	Update of relevant paragraphs in **Section 9.6**.

Assessment Methods

9.3.4 The EcIA detailed in this chapter has been undertaken in accordance with best practice guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM) (Ref 9-17). Full details of the approach applied are provided in **Appendix 9B**: Ecological Impact Assessment Methodology (ES Volume II), with an abridged overview provided below. The aims of the ecological impact assessment are to:

- identify relevant ecological features (i.e. designated sites, habitats, species or ecosystems) which may be impacted as a consequence of the Proposed Development;
- provide a scientifically rigorous and transparent assessment of the likely ecological impacts and resultant effects of the Proposed Development, which may be beneficial (i.e. positive) or adverse (i.e. negative);
- facilitate scientifically rigorous and transparent determination of the consequences of the Proposed Development in terms of national, regional and local policies relevant to nature conservation and biodiversity, where the level of

detail provided is proportionate to the scale of the development and the complexity of its potential impacts; and

- set out the steps to be taken to adhere to legal requirements relating to the relevant ecological features concerned.

9.3.5 The principal steps involved in the CIEEM approach can be summarised as:

- ecological features that are both present and might be affected by the Proposed Development are identified (both those likely to be present at the time works begin, and for the sake of comparison, those predicted to be present at a set time in the future) through a combination of targeted desk-based study and field survey work, to determine the relevant baseline conditions;
- the importance of the identified ecological features is evaluated to place their relative biodiversity and nature conservation value into geographic context, and this is used to define the relevant ecological features that need to be considered further within the EcIA process;
- the changes or perturbations predicted to result as a consequence of the Proposed Development (i.e. the potential impacts), and which could potentially affect relevant ecological features are identified and their nature described. Established best-practice, legislative requirements or other incorporated design measures to minimise or avoid impacts are also described and are taken into account;
- the likely effects (beneficial or adverse) on relevant ecological features are then assessed, and where possible quantified;
- measures to avoid or reduce any predicted significant effects, if possible, are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines). If necessary, measures to compensate for effects on features of nature conservation importance are also included;
- any residual effects of the Proposed Development are reported; and
- scope for ecological enhancement is considered.

9.3.6 It is not necessary in the assessment to address all habitats and species with potential to occur in the zone of influence of a proposed development. Instead, the focus should be on those that are *'relevant*'. CIEEM guidance (Ref 9-17) makes it clear that there is no need to 'carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable'. This does not mean that efforts should not be made to safeguard wider biodiversity and requirements for this have been considered. National policy documents emphasise the need to achieve no net loss of biodiversity and net gain of biodiversity.

9.3.7 To support focussed EcIA, there is a need to determine the scale at which the ecological features identified through the desk studies and field surveys undertaken

for the Proposed Development are of value. The value of each ecological feature has been defined with reference to the geographical level at which it matters, and the results of this assessment have been used to identify the relevant features requiring impact assessment. The frames of reference used for this assessment, based on CIEEM guidance (Ref 9-17), are:

- international (generally this is within a European context, reflecting the general availability of good data to allow cross-comparison);
- national (Great Britain, but considering the potential for certain ecological features to be more notable (of higher value) in an England context relative to Great Britain as a whole);
- regional (East Midlands);
- county (Nottinghamshire);
- district (Bassetlaw);
- local (ecological features that do not meet criteria for valuation at a District or higher level, but that have sufficient value to merit retention or mitigation); and
- negligible (common and widespread ecological features of such low priority that they do not require retention or mitigation at the relevant location to otherwise maintain a favourable nature conservation status).

9.3.8 All ecological features of local value and above have been taken forward to impact assessment, and are the '*relevant ecological features*' for the purposes of impact assessment.

9.3.9 In line with the CIEEM guidelines, the terminology used within the EcIA draws a clear distinction between the terms *'impact'* and *'effect'*. For the purposes of the EcIA, these terms are defined as follows:

- impact – actions resulting in changes to an ecological feature. For example, demolition activities leading to the removal of a building utilised as a bat roost; and
- effect – outcome resulting from an impact, acting upon the conservation status or structure and function of an ecological feature. For example, killing/injury of bats and reducing the availability of breeding habitat as a result of the loss of a bat roost may lead to an adverse effect on the conservation status of the population concerned.

9.3.10 When describing potential impacts (and where relevant the resultant effects) consideration is given to the following characteristics likely to influence this:

- beneficial/adverse (i.e. is the change likely to be in accordance with nature conservation objectives and policy?):

  - beneficial (i.e. positive) - a change that improves the quality of the environment, or halts or slows an existing decline in quality (e.g. increasing the extent of a habitat of conservation value); or
  - adverse (i.e. negative) - a change that reduces the quality of the environment (e.g. destruction of habitat or increased noise disturbance).
- magnitude - the *'size'*, *'amount'* or *'intensity'* of an impact - this is described on a quantitative basis where possible;
- spatial extent - the spatial or geographical area or distance over which the impact/effect occurs;
- duration - the time over which an impact is expected to last, prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
- reversibility (i.e. is the impact temporary or permanent?). A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible, or cannot be achieved within a reasonable timescale (in the context of the feature being assessed); and
- timing and frequency (i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons).

Significance Criteria

9.3.11 For each ecological feature, only those characteristics relevant to understanding the ecological effect and determining the significance are described. The determination of the significance of effects has been made based on the predicted effect on the structure and function, or conservation status, of relevant ecological features, as follows:

- not significant – no effect on structure and function, or conservation status; and
- significant – structure and function, or conservation status is affected.

9.3.12 For significant effects (both adverse and beneficial) this is qualified with reference to the geographic scale at which the effect is significant (e.g. an adverse effect significant at a national level).

9.3.13 The CIEEM approach described in Appendix 9B: Ecological Impact Assessment Methodology (ES Volume II) broadly accords with the EIA methodology described in Chapter 2: Assessment Methodology. However, the matrix has not been used to classify effects, as this deviates from CIEEM guidance. In order to provide consistency of terminology in the final assessment, the findings of the CIEEM

assessment have been translated into the classification of effects scale used in other chapters of the ES as outlined in

Table 9-4

~~9.3.13 Table 9-4~~

9.3.14 ~~Table 9-4~~.

Table 9-4: Relating CIEEM assessment terms to those used in other ES chapters

Effect classification terminology used in other ES chapters		Equivalent CIEEM assessment
Significant (beneficial)	Major beneficial	Beneficial effect on structure/function or conservation status at regional, national or international level.
	Moderate beneficial	Beneficial effect on structure/function or conservation status at District or County level.
Non-significant	Minor beneficial	Beneficial effect on structure/function or conservation status at Site or Local level.
Non-significant	Neutral	No effect on structure/function or conservation status.
Non-significant	Minor adverse	Adverse effect on structure/function or conservation status at Site or Local level.
Significant (adverse)	Moderate adverse	Adverse effect on structure/function or conservation status at District or County level.
	Major adverse	Adverse effect on structure/function or conservation status at Regional, National or International level.

Extent of Study Area

9.3.15 The study areas used in this assessment were defined with reference to the likely zone of influence over which the Proposed Development may have potential to result in significant effects on relevant ecological features.

9.3.16 It is important to recognise that the potential zone of influence of the Proposed Development may vary over time (e.g. the construction zone of influence may differ

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from the operational zone of influence) and/or depending on the individual sensitivities of different ecological features.

9.3.17 This was taken into account when defining study areas and these are sufficient to address the potential worst case zone of influence of the Proposed Development on the relevant ecological features concerned.

9.3.18 The extent of the study areas applied during the desk study and field surveys are detailed within Table 9-5~~Table 9-5~~~~Table 9-5~~ and Table 9-6~~Table 9-6~~~~Table 9-6~~.

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Sources of Information

9.3.19 The ecological baseline has been determined through a combination of desk study and field survey, as summarised below.

Desk Study

9.3.20 A desk study was carried out to identify nature conservation designations and protected and notable habitats and species potentially relevant to the Proposed Development. The desk study was carried out using the data sources detailed in Table 9-5~~Table 9-5~~~~Table 9-5~~ and is reported in detail in the Preliminary Ecological Appraisal (PEA) report in **Appendix 9C** (ES Volume II).

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9.3.21 Protected and notable habitats and species include those listed under Schedules 1, 5 and 8 of the WCA (Ref 9-1), Schedules 2 and 4 of The Habitats Regulations (Ref 9-4), and species and habitats of principal importance for nature conservation in England listed under Section 41 (S41) of the NERC Act (Ref 9-3). Other notable habitats and species have also been considered and assessed on a case by case basis (e.g. those included in national Red Data Books and Lists and within the LBAP (Ref 9-16), but not protected by legislation). This is consistent with the requirements of relevant planning policy.

Table 9-5: Desk study area and data sources

Ecological Feature	Study Area	Data Sources	Date Accessed
International statutory nature conservation designations (e.g. Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site)	10km	Multi-Agency Geographic Information for the Countryside (MAGIC) website	February 2017 and January 2019
National statutory nature	2km	MAGIC website Natural England website	February 2017 and

Ecological Feature	Study Area	Data Sources	Date Accessed
conservation designations (e.g. Site of Special Scientific Interest (SSSI))			January 2019
Local non-statutory nature conservation designations (e.g. Local Wildlife Sites (LWS))	2km	Nottinghamshire Biological and Geological Record Centre Lincolnshire Environmental Records Centre Nottingham City Council Insight Mapping website	February 2017 February 2017 and January 2019
Protected and notable habitats and species	2km	Nottinghamshire Biological and Geological Record Centre Lincolnshire Environmental Records Centre	February 2017
Ponds	500m	1:25,000 Ordnance Survey maps Aerial photographs (Google Earth) MAGIC website	February 2017

Field Surveys

9.3.22 The scope of habitat and protected species survey work completed to inform the EcIA is summarised in Table 9-6~~Table 9-6~~~~Table 9-6~~. This was determined through a PEA of the Site, as detailed within **Appendix 9C**: Preliminary Ecological Appraisal (ES Volume II), which also includes the rationale applied when scoping out surveys for certain species or species groups.

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Table 9-6: Scope of ecological field survey work

Ecological Survey	Survey Area	Survey Period
Phase 1 Habitat survey	Habitats within the Site and approximately 50m buffer where required.	February – June 2017 and ground-truth in January 2019
Badger survey	Suitable habitat for badger within the Site and approximate 100m buffer where required.	March 2017 and January 2019

Ecological Survey	Survey Area	Survey Period
Great crested newt survey	All ponds within 500m of the Site.	April – June 2017
Reptile survey	Suitable habitat for reptiles within the Site.	April – July 2017
Preliminary bat roost assessment – buildings and trees	All buildings and trees within and adjacent to the Site that have the potential to be directly impacted (demolition/felling) or indirectly impacted (significant noise/light disturbance) by the Proposed Development.	February 2017
Bat roost emergence/re-entry survey	All trees identified as having suitability for roosting bats as a result of the preliminary bat roost assessment.	July - August 2017
Bat activity survey	Suitable bat foraging and commuting habitat within and adjacent to the Site that might be directly or indirectly impacted by the Proposed Development.	May – September 2017
Breeding bird survey	Suitable habitat for breeding birds within the Site and approximate 100m buffer where required.	April – July 2017
Otter and water vole survey	Suitable riparian and terrestrial habitat within and adjacent to the Site.	April - August 2017

Rochdale Envelope

9.3.23 For the purposes of the ecological impact assessment it is assumed that the majority of the Proposed Power Plant Site would be cleared, no matter what the final sizing and layout of the structures is. The Rochdale Envelope parameters (i.e. the maximum parameters for the Proposed Development and in particular its main structures) therefore do not alter the parameters of the assessment of construction (or decommissioning) impacts on ecology, as they are by definition worst-case.

9.3.24 For the assessment of air quality impacts during operation (and thereby the effects reported on ecological receptors in this chapter), the worst-case configuration of engines, stack heights and stack locations has been assessed as described in **Chapter 6**: Air Quality. The assessment of operational impacts presented in this chapter is therefore also based upon a worst-case.

9.3.25 Given the above, no further discussion of the Rochdale Envelope parameters is provided in this chapter.

9.4 Baseline Conditions

Existing Baseline

9.4.1 The ecological baseline relevant to the Proposed Development is summarised below. Further details of the findings of desk and field based studies, including evaluation of the relative nature conservation value of identified ecological features, is provided in **Appendices 9C – 9I** (ES Volume II).

Statutory International Nature Conservation Designations within 10km

9.4.2 There are no international nature conservation designations within a 10km radius of the Site, which is the worst-case zone of influence defined in Table 9-5~~Table 9-5~~~~Table 9-5~~. This search radius is sufficient to identify all designations relevant to the assessment of potential air quality impacts. The nearest international designation is Hatfield Moor Special Area of Conservation (SAC), located approximately 19.5km to the north-west of the Site. Given that there is no potential for effects on international statutory designations, the Proposed Development does not require Habitats Regulations Assessment (HRA). In their response to the formal consultation (Table 9-2~~Table 9-2~~~~Table 9-2~~) Natural England acknowledged that the Proposed Development does not require HRA. A HRA NSER is provided as **Application Document Ref 4.3**.

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Statutory National Nature Conservation Designations within 2km

9.4.3 Lea Marsh SSSI, an important area of unimproved floodplain meadow and wet pasture adjacent to the River Trent, is located 1km to the north-east and downstream of the Site. This is of National nature conservation value.

9.4.4 There are no further National nature conservation designations within 2km of the Site.

Non-statutory Nature Conservation Designations within 2km

9.4.5 Ten non-statutory designations (LWSs) are located within 2km of the Site, as listed below. These are all of county nature conservation value.

- West Burton Power Station LWS - an area of mature flooded gravel pits and associated woodland with biodiversity interest for water beetles, water bugs, moths, amphibians and reptiles. Located partially within the Site;
- Bole Ings LWS – an old Trent oxbow with a good diversity of semi-natural habitat types. Located partially within the Site;
- West Burton Reedbed LWS - an extensive reedbed and associated carr woodland of botanical interest, located approximately 10m to the south-east of the Site;

- Burton Round Ditch LWS, approximately 70m to the south of the Site;
- Bole Ings Drains LWS, approximately 400m to the north of the Site;
- Saundby Ponds LWS, approximately 1km to the north of the Site;
- Bole Ings Flood Pasture LWS, approximately 1km to the north-east of the Site;
- Mother Drain, Upper Ings LWS, approximately 1.1km to the east of the Site;
- West Burton Meadow LWS, approximately 1.2km to the south-west of the Site; and
- Lea Meadow LWS, approximately 1.6km to the north-east of the Site.

Habitats

9.4.6 The habitats associated with the Site are summarised below. Full results of the Phase 1 Habitat survey, including a habitat plan, are provided in the PEA report (**Appendix 9C** (ES Volume II)).

9.4.7 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 as part of the agreed habitat compensation for the loss of great crested newt habitat associated with the construction of the WBB Power Station, though they were not used as receptor sites for great crested newts recovered during licensable works. 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.

9.4.8 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.

9.4.9 Habitats along the proposed electricity connection route to the existing 400kV WBB Power Station 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.

9.4.10 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.

9.4.11 In order to facilitate water and other utility connections, the Site includes operational areas of the WBB Power Station, which comprise modern operational buildings and plant, associated infrastructure and areas of hardstanding.

An area in the north of the Site has been identified as a location for habitat enhancement and management (Bole Round). This area comprises two landscaped Pulverised Fuel Ash (PFA) mounds that have been seeded with a neutral grassland mix in addition to semi-natural habitats including dense mature scrub and semi-natural broad-leaved woodland along the northern boundary. The broad-leaved woodland is connected to that present within Bole Ings LWS.

9.4.12 Other notable habitats that occur outside the Site, 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.

9.4.13 The following habitats present within the Site, or in close proximity, are considered to be of local value (as defined in **Section 9.3**) and are taken forward to the impact assessment. This does not include those habitats that occur solely within LWS boundaries, because these are considered as part of the assessment of impacts on these sites:

- semi-improved neutral grassland;
- swamp (reedbed) associated with ash lagoons; and
- the River Trent.

9.4.14 All other habitats associated with the Site, outside of LWS boundaries, are considered to be of negligible value (as defined in **Section 9.3**) and are not assessed further.

Protected and Notable Species

9.4.15 No protected, rare or notable plant species were identified within the Site during Phase 1 Habitat surveys, and none would be expected, given the landscaped and managed nature of the majority of habitats present. Habitats that may be affected along the proposed northern and southern drainage connection corridor options within West Burton Power Station LWS are unlikely to support rare or notable plants, as the LWS is not designated for its botanical interest and the main habitats to be impacted, such as dense scrub, are common and widespread.

9.4.16 No invasive, non-native plant species were identified within or directly adjacent to the Site.

9.4.17 The following protected and notable faunal species have been identified as present, or potentially present, in association with the Site:

- great crested newt;
- bats;
- badger;
- grass snake;
- breeding birds;
- otter; and
- brown hare.

Great Crested Newt

9.4.18 Small and medium sized populations of great crested newt were found in association with several ponds adjacent to 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. The Proposed Development would not directly impact on any ponds, but terrestrial habitat within the Site that would be affected, including seeded semi-improved neutral grassland, scrub and plantation woodland, provides suitable terrestrial habitat for great crested newt within the typical terrestrial range of the species around breeding ponds (250m).

9.4.19 Baseline information on great crested newt populations is presented within **Appendix 9E**: Great Crested Newt Survey Report (ES Volume II). The great crested newt populations present are assessed as being of county nature conservation value.

Bats

9.4.20 At least seven bat species were recorded foraging at 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.

9.4.21 The vast majority of bat activity recorded was by foraging common and soprano pipistrelle bats. Levels of bat activity by these species at static monitoring locations varied from very low to high, sometimes changing markedly on consecutive nights, most likely as a result of a change in local conditions and the availability of invertebrate prey. Observations of bats during transect surveys suggest that higher levels of activity were the result of continuous foraging by a small number of bats,

rather than the presence of a large population. Foraging activity was generally associated with areas of woodland and scrub habitat.

9.4.22 A very low level of foraging activity by the other five bat species was recorded at the Site.

9.4.23 Very few potential roosting features in buildings or trees were identified and no bat roosting activity was found. No commuting activity was found in association with habitats at the Site.

9.4.24 Baseline information on bats is presented within **Appendix 9G**: Bat Survey Report (ES Volume II). The assemblage of bat species associated with the Site is assessed as being of county nature conservation value.

Badger

9.4.25 Information on the status and distribution of badgers at the Site has not been included within this chapter in accordance with best practice, because badgers are potentially vulnerable to persecution. Baseline information on badger is presented within a confidential appendix (**Appendix 9D:** Badger Survey Report (ES Volume II)) that will be provided to bona fide parties on request.

Grass Snake

9.4.26 Habitats within the Site support a small, transient population of grass snakes of local nature conservation value. Baseline information on reptiles is presented within **Appendix 9F**: Reptile Survey Report (ES Volume II).

Breeding Birds

9.4.27 Cetti's warbler, a bird species listed on Schedule 1 of the WCA (Ref 9-1) but that is not currently considered threatened, was recorded likely breeding in habitats adjacent to the Site (1 to 2 singing males). This species is an uncommon breeding species in Britain, having only established a breeding population in the 1970's. It is limited in distribution to the milder areas of Britain, but it is also still expanding and consolidating its range and is responding to climate change which has allowed a gradual spread northwards. It is rare in Nottinghamshire, which is towards the north of its current range, and the population at the Site is assessed as being of regional nature conservation value.

9.4.28 A number of Red and Amber list bird species of conservation concern (Ref 9-18) were recorded at the Site and showed evidence of breeding, as outlined below. These species are generally common and widespread within Nottinghamshire, and are therefore considered to be of local nature conservation value.

- Red list passerines associated with scrub and woodland habitat - cuckoo, song thrush, tree sparrow and linnet;

- Amber list passerines associated with scrub and woodland habitat - bullfinch, dunnock and willow warbler; and
- Amber list species associated with wetland habitat - reed bunting and mute swan.

9.4.29 A number of other common bird species were confirmed or likely to be breeding within or adjacent to the Site. These are of negligible nature conservation value and have not been taken forward in the impact assessment.

9.4.30 Baseline information on breeding birds is presented within **Appendix 9H**: Breeding Bird Survey Report (ES Volume II).

Otter

9.4.31 There are records of otter in the desk study area and the River Trent adjacent to the Site is likely to form part of an otter territory.

9.4.32 No evidence of otter was found within any of the water bodies, wetland areas or associated terrestrial habitats within 100m of the Site. Otters are considered unlikely to use habitats associated with the Site for breeding as no suitable holt habitat was identified. However, otters may take occasional refuge within, or pass through, habitats at the Site, but any such activity is likely to be very transitory, given that otters typically have large home ranges, in the order of 11 to 18km of a main river and its associated tributaries. It is unlikely that the River Trent adjacent to the Site is used by any more than a single otter or a single family group.

9.4.33 Given the wide ranging nature of the species, it is considered that any otters using habitats at the Site would be of value at a district level. Baseline information on otter is presented within **Appendix 9I**: Riparian Mammal Survey Report (ES Volume II).

Brown Hare

9.4.34 Brown hare were recorded in association with areas of bare ground (ash roads), grassland and scrub habitats around the construction laydown area in the north of the Site.

9.4.35 The population of brown hare at the Site is considered to be of local nature conservation value. Baseline information on brown hare populations is presented within **Appendix 9C**: PEA Report (ES Volume II).

9.4.36 No other developments, including those recently consented on the wider West Burton Power Station site, are considered to have likely materially changed the reported baseline for the purposes of this assessment. The Battery Storage Facility, which became operational within the footprint of WBB Power Station in January 2018, is not anticipated to result in any effects on ecological receptors.

Future Baseline

9.4.37 The ecological baseline in 2020 (prior to the earliest date that the Proposed Development would commence construction, subject to the necessary consents being granted and an investment decision being made) is likely to be very similar to the existing baseline. The majority of habitats within the Site are within landscaped areas that are subject to an established management regime and this would likely continue. Therefore, their extent, composition and structure is unlikely to change markedly. In less managed areas, or if management ceased, minor changes to habitats might occur through ecological succession (e.g. scrub encroachment in grassland and wetland habitats). Young plantings of trees will continue to mature and their relative ecological value may increase, but not substantively. As a result of the likely absence of change in habitats, the status and distribution of species is also unlikely to undergo significant change.

9.5 Development Design and Impact Avoidance

9.5.1 The design process for the Proposed Development has included consideration of ecological constraints and has incorporated, where reasonably practicable, measures to reduce the potential for adverse ecological effects, in accordance with the 'mitigation hierarchy' and relevant planning policy. The measures identified and adopted include those that are inherent to the design of the Proposed Development, and those that can realistically be expected to be applied as part of construction environmental best practice, or as a result of legislative requirements.

9.5.2 The development design and impact avoidance measures that have been, or would be, adopted during the construction, operation and decommissioning phases of the Proposed Development are set out below.

Construction

9.5.3 Compliance with industry good practice and environmental protection legislation during construction in relation to prevention of surface and ground water pollution, fugitive dust management and noise prevention or amelioration.

9.5.4 In support of the above, the construction contractor would prepare and implement a Construction Environmental Management Plan (CEMP) detailing all requirements for environmental protection and legal compliance. A Framework CEMP has been prepared to accompany the Application (**Application Document Ref. No. 7.3**); the CEMP prepared by the contractor will be in accordance with the principles set out in the Framework CEMP, and is proposed to be secured by a Requirement of the draft DCO (**Application Document Ref. No. 2.1**).

9.5.5 The Proposed Development would avoid, as far as reasonably practicable, areas of high quality habitat, such as mature trees and woodland/wetland habitats associated with LWSs to the east and south of the Site.

9.5.6 The location of the Proposed Development would largely avoid the need for the removal of mature trees. A single mature willow tree is present within the proposed southern drainage connection corridor option and this may need to be felled if this corridor is chosen. Some pruning of mature trees may be required along the proposed northern drainage connection corridor, but it is unlikely that any mature trees will need to be felled in this area. No other mature trees are located within the Site. Retained trees adjacent to construction working areas would be protected by clearly defined root protection zones to prevent damage/compaction of roots by plant and other machinery.

9.5.7 Measures would be taken prior to and during construction to avoid the killing/injury of great crested newts in terrestrial habitats near to breeding ponds. These would include the erection of appropriate exclusion fencing around suitable habitats and recovering newts under licence from 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 suitably licensed Ecological Clerk of Works. Destructive searches of other natural refugia within the Site would be completed in the same way. 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. Fencing would be left in place for the duration of the construction phase to prevent newts dispersing into construction areas. These measures would be implemented under a great crested newt European Protected Species Mitigation (EPSM) licence, which would be obtained in advance of the start of construction works.

9.5.8 The measures outlined above to prevent the killing/injury of great crested newt 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. Reasonable avoidance measures would be used during clearance of habitat suitable for grass snake, in any areas outside newt risk zones, to minimise the risk of direct impacts. These would include as required and where reasonably practicable, clearance of vegetation to reduce its suitability for grass snake, thereby encouraging animals to move away from affected areas into adjacent suitable habitat.

9.5.9 The location of the Proposed Development would avoid the permanent loss of any main badger setts. If required, a Natural England licence would be obtained to close active setts (either permanently or temporarily) that would be affected by the works. Further information on badgers is presented within a confidential appendix (**Appendix 9D:** Badger Survey Report, ES Volume II) that will be provided to bona fide parties on request.

9.5.10 To ensure legislative compliance in relation to nesting birds, all clearance of suitable vegetation during site preparation would be undertaken outside the breeding season (typically March to August inclusive for most species), where reasonably practicable.

In situations where this is not possible, an ecologist would check the working area for nests before works commence. If nests were discovered, appropriate mitigation would be implemented to ensure that they are not damaged or destroyed before any works can commence in that area. This would include imposing exclusion zones between the works and nest(s) and suspending vegetation clearance works within the area until any young had fledged.

9.5.11 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, construction works that would cause disturbance to Cetti's warbler or other protected birds within the nearby West Burton Reedbed LWS and other adjacent habitats would be timed to be outside the bird breeding season (March to August inclusive).

9.5.12 Precautionary measures would be implemented to prevent trapping wildlife in construction excavations, in order to ensure compliance with animal welfare legislation. Any 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 allow animals (e.g. badger or otter) to vacate excavations should they fall in.

9.5.13 An Ecological Clerk of Works would be employed to supervise and manage the implementation of measures to mitigate impacts on ecological features prior to and during the construction phase.

9.5.14 Construction temporary lighting would be arranged so that excessive glare is minimised outside the construction 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. 7.5**).

9.5.15 All habitats subject to temporary impacts during construction, such as those within the construction laydown area, electricity connection route and proposed northern/southern drainage connection corridors, if chosen, would be reinstated where reasonably practicable on a like-for-like basis at the same location following construction where practical. Where appropriate, well-established plant stock would be used to reduce the time taken to restore habitats to their pre-construction condition.

9.5.16 Updated ecological surveys would be completed prior to the start of construction, where necessary, to gain up to date information on relevant protected or notable species whose status or distribution may have changed since baseline surveys were completed (e.g. badger). This would be required to inform protected species licence applications (where necessary), or otherwise to determine appropriate mitigation requirements.

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9.6.2 To enable a focussed impact assessment, an initial screening exercise has been completed (**Table 9-7~~Table 9-7~~Table 9-7**) to identify the potential impacts of the construction phase that are likely to result in adverse or beneficial effects on relevant ecological features and that require further impact assessment. The relevant impacts are taken forward in the more detailed impact assessment that follows. Those impacts that are considered unlikely to result in effects are scoped out and not considered further.

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9.6.3 The following broad categories of impact and their potential effects on ecological features have been used for the purposes of the screening exercise:

- habitat loss - clearance or damage of habitat to facilitate construction, resulting in temporary or permanent reduction in habitat extent and potential direct and indirect effects on associated species; and
- disturbance - increased levels of disturbance (noise, vibration, construction lighting), potentially resulting in adverse effects on protected and notable species.

Table 9-7: Screening of impacts during construction to determine potential effects on ecological features

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during construction		Scoped into EcIA?
		Habitat loss	Disturbance (noise, vibration, artificial light)	
Lea Marsh SSSI	National	No - The Proposed Development is outside the designation boundary. The habitats within the Site will not be of functional importance to faunal groups associated with the SSSI, such as breeding waders.	No - Designation is too distant from the Site to be susceptible to disturbance impacts.	No
West Burton Power Station LWS	County	Yes - Part of the Site overlaps the LWS boundary.	Yes - Construction would occur within and directly adjacent to the LWS.	Yes
Bole Ings LWS	County	No – The Site partially overlaps the LWS boundary in the ecological management and enhancement area in the north of the Site (**Figure 9.1** in (ES Volume III)), however no impact to LWS habitat will occur.	No – This area of the Site will be subject to landscaping and biodiversity management and enhancement which would not impact on the habitats and species associated with the LWS.	No
West Burton Reedbed LWS	County	No - The Proposed Development is outside the LWS boundary.	No - The LWS is designated for its botanical interest, which would not be affected by disturbance impacts. The effects of disturbance on fauna present will be assessed within the individual species impact assessments.	No

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during construction		Scoped into EcIA?
		Habitat loss	Disturbance (noise, vibration, artificial light)	
Burton Round Ditch LWS Bole Ings Drains LWS Saundby Ponds LWS Bole Ings Flood Pasture LWS Mother Drain, Upper Ings LWS West Burton Meadow LWS Lea Meadow LWS	County	No - The Proposed Development is outside the boundary of these LWS.	No - None of these LWS would be affected by disturbance impacts as they are either too distant from the Site, or are separated by buffers to disturbance, such as dense scrub/woodland habitat.	No
Semi-improved neutral grassland	Local	Yes - The Proposed Development would result in loss of grassland habitat.	n/a	Yes
Swamp (reedbed) associated with ash lagoons	Local	No – The ash lagoons are located outside the Site.	n/a	No
River Trent	Local	No – the River Trent would not be impacted during construction.	n/a	No
Great crested newt	County	Yes - The Proposed Development would result in loss of terrestrial habitat suitable for great crested newt.	Unlikely - This species is less susceptible to indirect disturbance impacts.	Yes

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during construction		Scoped into EcIA?
		Habitat loss	Disturbance (noise, vibration, artificial light)	
Bats	County	Yes - The Proposed Development would result in the loss of habitats used by foraging bats.	Yes - The Proposed Development would result in disturbance of adjacent habitats used by foraging bats.	Yes
Badger	The assessment of impacts and effects on badger during the construction phase is included within a separate confidential appendix (**Appendix 9D**: Badger Survey, ES Volume II).			
Grass snake	Local	Yes - The Proposed Development would result in the loss of habitats used by grass snake.	Yes - The Proposed Development would result in disturbance of adjacent habitats used by grass snake.	Yes
Cetti's warbler	Regional	No - This species was recorded in habitats outside of the Site.	Unlikely - Effect unlikely with appropriate measures taken to avoid disturbance (**Section 9.5**).	No
Red and Amber list passerines associated with scrub and woodland habitat: Cuckoo, song thrush, tree sparrow, linnet, bullfinch, dunnock, willow warbler	Local	Yes - The Proposed Development would result in the loss of habitats used by breeding birds.	Yes - The Proposed Development would result in disturbance of adjacent habitats used by breeding birds.	Yes
Amber list species associated with wetland habitat:	Local	No - The Proposed Development would not result in any loss of wetland habitat used by these species.	Yes - The Proposed Development would result in disturbance of adjacent habitats used by wetland birds.	Yes

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during construction		Scoped into EcIA?
		Habitat loss	Disturbance (noise, vibration, artificial light)	
Reed bunting, mute swan				
Otter	District	Yes - The Proposed Development would result in the loss of habitats that may be used by otter.	Yes - The Proposed Development would result in disturbance of habitats that may be used by otter.	Yes
Brown hare	Local	Yes - The Proposed Development would result in the loss of habitats used by brown hare.	Yes - The Proposed Development would result in disturbance of habitats used by brown hare.	Yes

Key:
n/a = impact is not applicable to the ecological feature, for example noise impacts on habitat features.
No = no pathway for the impact to result in an effect on the ecological feature.
Unlikely = impact pathway exists, but there is no reasonable likelihood that it would result in an effect on the ecological feature following the implementation of development design and impact avoidance measures.
Yes = impact has the potential to result in an effect on the ecological feature.

9.6.4 Impacts during the construction period that have potential to result in significant effects on relevant ecological features are considered further below.

West Burton Power Station LWS

9.6.5 Construction of the proposed northern or southern drainage connection corridors, if chosen, would require some vegetation clearance and ground disturbance within the boundary of the LWS. This would occur regardless of the final drainage connection corridor chosen. The impact on habitats would be temporary, as habitats would be reinstated over the corridor upon the completion of works. As a result, there would be no permanent land take from the LWS. The flooded gravel pits and associated secondary wet woodland, which are the habitats that support the ecological features for which the LWS is designated (water beetles and bugs, moths, amphibians and reptiles), would not be directly or indirectly affected during construction of either drainage connection corridor.

9.6.6 The northern drainage connection corridor would be constructed along and adjacent to existing access tracks and a road (River Road) in the northern part of the LWS. Removal of scrub adjacent to access tracks/the River Road would be required, affecting a worst-case area of up to 0.35ha. Some pruning of trees on the edge of the woodland may be required and small areas of swamp (reedbed) may also be affected, but impacts on these habitats would be avoided, where possible, and protective fencing would be established as necessary.

9.6.7 The southern drainage connection corridor is located along the southern boundary of the LWS and if implemented, would require removal of habitat, mainly comprising scrub and scattered semi-mature trees, up to a worst-case area of 0.5ha. Part of an existing drainage ditch may also be impacted during construction works, though the extent and nature of the impact on this feature is unknown at this stage. No impact on the hydrology of the flooded gravel pits would be expected as a result of works to the drainage ditch, as there is no direct connection between these features.

9.6.8 The maximum area of temporary habitat loss from the LWS is therefore 0.5ha. This comprises only a small proportion of the LWS, which covers an area of approximately 16ha. All habitats would be re-instated following construction of the drainage connection corridor, which is likely to last for one year or less. The time taken to re-establish existing baseline conditions would depend on the habitat, but for the main habitat to be affected (scrub) it is likely to be approximately 10 years, especially with the use of well-established plant stock.

9.6.9 Clearance of habitat may result in localised impacts on fauna associated with the LWS. However, this will be in peripheral areas that do not represent the primary habitat for species of interest (amphibians, grass snake, aquatic invertebrates). This would limit the potential for an adverse effect on the conservation status of these species. Standard impact avoidance measures to minimise direct impacts on protected species (see **Section 9.5**) would minimise the risk of killing/injury during construction. Clearance of habitat would result in partial habitat fragmentation within the LWS, but connectivity would remain to the east along the river corridor and the

construction period would be relatively short, likely lasting one year or less. There would also be a reduction in habitat availability as a result of construction within the LWS, but this would only comprise a small proportion of the overall LWS, and affect habitats that are not important for species of interest. Any residual effects on the fauna associated with the LWS are considered unlikely to have an adverse effect on their conservation status. No adverse effects on fauna contributing to the WFD status of waterbodies within the LWS, beyond those resulting from the small scale localised temporary impacts in working areas, are anticipated.

9.6.10 The small scale and temporary loss of habitats that would be required during construction of either of the drainage connection corridors, if chosen, would be unlikely to compromise the structure or function of LWS habitats. The required works would be of short duration and habitats would be reinstated after works to a condition comparable to, or better than, the existing baseline in the long-term. For these reasons, and because the habitats that are the main reasons for designation would be retained and protected during works, no adverse effects on the conservation status of the faunal groups for which the LWS is designated are likely. The predicted effect on the LWS of county value is therefore neutral and not significant.

Semi-improved Neutral Grassland

9.6.11 Construction of the Proposed Development would require permanent and temporary losses of semi-improved neutral grassland. The majority of grassland that would be affected is associated with landscaped areas of the Site and is of relatively recent sown origin. Therefore, it is currently of relatively low ecological value (local value) and it comprises types that can be readily substituted to deliver habitats of comparable or higher ecological structure and function. The grassland is subject to an ongoing programme of management.

9.6.12 Construction works at the Proposed Power Plant Site would result in the permanent loss of approximately 2.5ha of semi-improved neutral grassland. Comparable grassland occurs extensively in areas adjacent to the Site and in the wider area, in particular to the north within Bole Ings. This reduces the relative ecological consequences of the required loss of 2.5ha.

9.6.13 A further approximately 2ha of semi-improved neutral grassland in other parts of the Site, such as the proposed construction laydown area and electricity connection route, would be temporarily lost or damaged during construction. These areas would be re-instated following construction, which is expected to last up to four years, although a more likely construction programme would be within three years from commencement. These areas would likely re-establish to a comparable or better condition, relative to the existing baseline, within five years of reinstatement.

9.6.14 For the above reasons, the temporary and permanent losses of grassland that would be required for construction of the Proposed Development would be unlikely to adversely affect the structure or function of the wider grassland resource associated with the Site or the surrounding landscape. The predicted effect on semi-improved neutral grassland of local value is therefore neutral and not significant.

Great Crested Newt

9.6.15 The Proposed Development would impact on great crested newts through temporary and permanent terrestrial habitat loss, partial obstruction of access to foraging habitats, or through killing or injury of individual newts. There would be no loss of breeding habitat as a consequence of the Proposed Development.

9.6.16 Construction works at the Proposed Power Plant Site would result in the permanent loss of approximately 3.5ha of terrestrial habitat suitable for great crested newts (grassland, plantation woodland and artificial hibernacula) located between 150m and 450m from the nearest great crested newt breeding site, within the series of ash lagoons to the north of the Site. The majority of the habitats to be lost in this area were planted as part of the Landscape and Creative Conservation Plan for WBB Power Station, partly to compensate for the loss of terrestrial habitat suitable for great crested newts during construction of WBB Power Station, though they were not used as receptor sites for great crested newts recovered during licensable works. Approximately half of the area of habitat within the Proposed Power Plant Site (1.8ha) is located within 250m of the ash lagoons; this is considered to be the typical terrestrial range of great crested newts around breeding ponds where the majority of newt activity is likely to occur.

9.6.17 A further approximately 1.2ha of suitable terrestrial habitat (grassland and scrub) would be temporarily lost within the construction laydown area, located between 20m and 150m from the ash lagoons. Habitats in this area would be fully re-instated following construction, which could last up to a maximum of four years, but it would take several years for habitats to re-establish to a comparable structure and function for great crested newt. The temporary habitat loss would therefore likely last for approximately 10 years, encompassing the period from initial habitat removal to reinstatement of comparable structure and function.

9.6.18 The total extent of temporary and permanent habitat loss within a 250m radius of the ash lagoons (approximately 3ha) amounts to approximately 10 to 15% of the available terrestrial habitat suitable for great crested newt within the same radius around the ponds. There is an abundance of suitable terrestrial habitat contiguous with the ash lagoons to the north and east, including grassland, scrub, woodland and wetland habitats. The loss of habitat in the construction laydown area and Proposed Power Plant Site would partially obstruct newt dispersal into habitats to the south-east of the ash lagoons, but dispersal into habitats to the north and east would not be affected and connectivity with other wetland habitats in the wider West Burton Power Station site would remain.

9.6.19 Construction of the proposed southern drainage connection corridor and electricity connection route would result in the temporary loss of up to 2ha of terrestrial habitat located within 50m and 250m of the reedbeds associated with West Burton Reedbed LWS, which were also found to support breeding great crested newts. The habitats to be affected mainly comprise semi-improved neutral grassland and scrub. These would be fully re-instated following construction and would take

approximately 10 years from the point of removal to the replacement of comparable structure and function for great crested newt. The habitat that would be temporarily lost amounts to approximately 5 to 10% of the available terrestrial habitat within a 250m radius of the reedbeds. The habitats to be affected are unlikely to be integral to the maintenance of the population of great crested newts in the area, as there are optimal terrestrial habitats such as wet woodland and scrub/rank grassland mosaics in closer proximity to the reedbeds. The majority of habitat to be affected comprises managed grassland, which is likely to provide only limited opportunities for foraging and shelter in comparison.

9.6.20 The killing/injury of individual newts during construction works within the vicinity of breeding ponds would be avoided with the implementation of the measures outlined in **Section 9.5**. However, the temporary and permanent loss of habitat as a result of the Proposed Development would result in reduced availability of habitat for foraging, shelter and hibernation, which may lead to an adverse effect on the conservation status of the local population of great crested newts. Therefore, in the absence of mitigation beyond the prevention of killing/injury of individual newts, the effect on the great crested newt population of county value is predicted to be moderate adverse (significant).

Bats

9.6.21 The Proposed Development only has the potential to affect foraging bats, as no bat roosting habitat would be directly or indirectly affected and no commuting activity was recorded in association with the habitats on Site.

9.6.22 Construction works at the Proposed Power Plant Site would result in the permanent loss of approximately 0.5ha of semi-mature plantation broad-leaved woodland and approximately 2.5ha of semi-improved neutral grassland and young plantation. Clearance required for the construction laydown area would lead to the temporary loss of approximately 1.2ha of habitat, comprising a mosaic of scrub and grassland, which would be re-instated following construction and would then take approximately 5 to 10 years to re-establish to baseline conditions. Survey results suggest that these habitats support only a small number of bats of common species (common and soprano pipistrelle). They are likely to be of relatively low value for bats when compared with adjacent areas of woodland and wetland within West Burton Power Station LWS. The loss of these habitats would also not affect habitat connectivity for bats in the landscape. Therefore, no effect on the conservation status of local bat populations is considered likely.

9.6.23 Construction works along the northern or southern drainage connection corridors, if chosen, would lead to the temporary loss of up to 0.5ha of mainly scrub habitat at the periphery of West Burton Power Station LWS. This would be re-instated following construction and would be expected to return to existing baseline conditions within approximately 10 years. Habitats within the LWS are likely to be used by all seven of the bat species recorded during surveys. Very low levels of foraging activity by most of these species, some of which are considered to be

scarce or rare in Nottinghamshire, were found in association with LWS habitats, though levels of activity are likely to be higher within high quality habitats such as the flooded gravel pits. The temporary habitat loss that would be required during construction would affect a very small percentage (less than 5%) of the total area of the LWS and would result in a minor impact on habitat connectivity, due to the location of the drainage connection corridors along an existing track through LWS habitats, or at the edge of the LWS. High quality foraging habitats, such as the flooded gravel pits and associated wet woodland, would not be directly affected. The impact of temporary habitat loss within the LWS is not considered likely to have an adverse effect on the conservation status of any of the bat species recorded at the Site.

9.6.24 Foraging bats would experience an increase in levels of noise, vibration and artificial light during construction. Light disturbance would be minimised as far as reasonably practicable, as lighting would be directed into working areas only and would be designed so as not to illuminate foraging habitats adjacent to the Site, such as areas of woodland in accordance with the Lighting Strategy (**Application Document Ref. 7.4**). The effect on bats of any minor residual light spill from working areas would differ between species, for example pipistrelle bats and *Nyctalus* species are more tolerant of artificial light than *Myotis* species, but any localised impacts would be unlikely to significantly affect the use of adjacent habitats by foraging bats. Localised noise and vibration impacts are similarly unlikely to significantly affect habitat use by bats in adjacent areas. There is sufficient alternate habitat in the wider area to accommodate any localised small scale displacement of bats from habitats adjacent to working areas.

9.6.25 The temporary and permanent loss of habitat and increased level of disturbance that would result during the construction phase are unlikely to have an adverse effect on the conservation status of any of the bat species recorded at the Site. The predicted effect on the bat species assemblage of county value is therefore neutral and not significant.

Grass Snake

9.6.26 Construction works at the Proposed Power Plant Site would result in the permanent loss of approximately 3.5ha of semi-improved neutral grassland, young plantation and semi-mature plantation broad leaved woodland. These habitats support a small population of grass snake.

9.6.27 The loss of these habitats would lead to a reduction in the availability of habitat for foraging, basking and shelter. However, such opportunities are relatively limited within this area (with the exception of the artificial hibernacula present) due to the landscaped nature and relative uniformity of the habitats present. Grass snakes typically have large home ranges of several hectares or more. As such, their presence in this area is likely to be transitory, as animals disperse between more optimal habitats outside the Site, such as the ash lagoons to the north-west and the wetland habitats associated with West Burton Power Station LWS to the east. The

habitat to be lost provides connectivity between these areas of more optimal habitat, but habitat connectivity would remain to the north of the Site, where there are extensive areas of suitable grassland, scrub, woodland and wetland habitats.

9.6.28 The Proposed Development would also result in the temporary loss of grassland and scrub habitat within the construction laydown area, electricity connection route and northern or southern drainage connection corridors, if chosen. Up to 3ha would be lost during construction, but would be re-instated afterwards and existing baseline conditions would be restored within approximately 10 years. These areas are also likely to be used on a transient basis by grass snake.

9.6.29 The loss of habitat used by grass snake is unlikely to have an adverse effect on the conservation status of the species in the local area, given that the areas to be affected are only likely to be used on a transient basis. The areas affected represent only a small proportion of the total area of habitat suitable for grass snake in the surrounding area. The predicted effect on the grass snake population of local value is therefore neutral and not significant.

Red and Amber List Passerine Birds Associated with Scrub and Woodland Habitat

9.6.30 Construction works at the Proposed Power Plant Site would result in the permanent loss of approximately 0.5ha of semi-mature plantation broad-leaved woodland.

9.6.31 Up to 1.5ha of scrub habitat would also be temporarily lost to facilitate construction works within the construction laydown area, electricity connection route and northern or southern drainage connection corridors, if chosen. These areas of scrub would be re-instated following construction and existing baseline conditions would likely be restored in approximately 10 years.

9.6.32 The area of woodland and scrub that would be impacted during construction represents only a very small proportion of the habitat resource available locally. Competition for resources in surrounding areas may increase slightly as a result of the reduction in habitat, but the effect is unlikely to compromise the conservation status of the relevant bird species.

9.6.33 Increases in levels of noise, vibration and artificial light during construction works in spring and summer may have an adverse effect on the breeding success of birds in adjacent habitats. The effects of disturbance on birds are little understood, but disturbances could result in reduced usage of adjacent habitats by breeding birds, or possibly abandonment of nests. However, these impacts would be localised and given the quantity of suitable habitat in the surrounding area, any effects on local bird populations are considered unlikely to be significant.

9.6.34 In view of the above, habitat loss and disturbance impacts during construction are considered unlikely to have an adverse effect on the conservation status of local populations of red and amber list bird species associated with scrub and woodland.

The predicted effect on these bird populations of local value is therefore neutral and not significant.

Amber List Bird Species Associated with Wetland Habitat

9.6.35 Increased levels of disturbance during construction in the spring and summer have the potential to adversely affect the breeding success of birds associated with wetland habitat adjacent to the Site. However, even if a localised effect was realised, this is unlikely to have an adverse effect on the conservation status of local populations of the species concerned, given their common and widespread status in the county. The predicted effect on wetland bird populations of local value is therefore predicted to be neutral and not significant.

Otter

9.6.36 The surveys undertaken for the Proposed Development concluded that any otter presence in habitats associated with the Site is likely to be very transitory in nature. The required construction works would not obstruct the River Trent, and would only affect localised areas of scrub habitat away from the river, so there would be no impact on the ability of otter to use the river as a movement corridor.

9.6.37 Disturbance of otters using the River Trent is unlikely, as this species is largely nocturnal so would be active largely at times when it would not coincide with construction works. The Proposed Power Plant Site is too distant from the river for construction works here to be likely to disturb otter, regardless of the timing of these works. Even if there was a minor deterrent effect from the construction works on otter, this would likely be of short duration, localised and temporary, and therefore any effect would not be significant.

9.6.38 On the basis of the above, the impact of habitat loss and disturbance is very unlikely to have an adverse effect on the conservation status of the local otter population of district value and the predicted effect is neutral and not significant.

Brown Hare

9.6.39 Use of the construction laydown area would result in the temporary loss of approximately 1.2ha of grassland and planted scrub habitat. These habitats would be re-instated following construction and would re-establish to former baseline conditions in approximately 10 years.

9.6.40 Hares occupy large home ranges and there is an abundance of suitable habitat to the north of the Site. The effect of the temporary loss of this small area of habitat on the local hare population would therefore be negligible. Increased levels of disturbance during construction are unlikely to have an effect on hares, as those that are currently present utilise parts of the Site that are already subject to regular disturbance from ash handling operations.

9.6.41 The impact of habitat loss and disturbance during construction would not adversely affect the conservation status of the local hare population of local value and the predicted effect is neutral and not significant.

Opening

9.6.42 The impacts and potential effects on ecological features at opening would be the same as those at operation, which are considered below.

Operation

9.6.43 This section describes the impacts and potential effects during the operational phase of the Proposed Development on relevant ecological features, in the absence of any mitigation over and above that which is inherent to the design (as described in **Section 9.5**).

9.6.44 To enable a focussed impact assessment, an initial screening exercise has been completed (Table 9-8~~Table 9-8~~Table 9-8) to determine which of the potential impacts during the operational phase are likely to result in effects on ecological features, following the implementation of development design and impact avoidance measures. These are taken forward in the more detailed impact assessment that follows. Those impacts that are considered unlikely to result in effects are scoped out and not considered further.

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9.6.45 Potential impacts during the operational phase that could result in effects on ecological features are as follows:

- air quality impacts - air pollution from stack emissions, potentially leading to adverse effects on sensitive habitats, through increased nitrogen and acid deposition; and
- disturbance impacts - increased levels of disturbance (noise, vibration, artificial lighting), potentially resulting in adverse effects on ecological features.

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during operation		Scoped into EcIA?
		Air quality impacts	Disturbance impacts (noise, vibration, artificial light)	
Lea Marsh SSSI	National	Yes	No - Designation is too distant from the Site to be susceptible to disturbance impacts.	Yes
West Burton Power Station LWS	County	Yes	Unlikely - The main faunal interest feature of the LWS is water beetles and water bugs, which are unlikely to be adversely affected by increased levels of disturbance during operation of the Proposed Development. The flooded gravel pits are located approximately 75m from the Proposed Power Plant Site and are separated by areas of dense scrub which would also act as a buffer to disturbance. Potential effects on other fauna associated with the LWS are considered below.	Yes
Bole Ings LWS	County	Yes	No – This area of the Site will be subject to on-going biodiversity management and enhancement which would not impact on the habitats and species associated with the LWS.	
West Burton Reedbed LWS	County	Yes	No - The LWS is located approximately 200m to the south of the Proposed Power Plant Site and is already subject to operational disturbance	Yes

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during operation		Scoped into EcIA?
		Air quality impacts	Disturbance impacts (noise, vibration, artificial light)	
			associated with WBB Power Station, located approximately 100m to the west.	
Burton Round Ditch LWS Bole Ings Drains LWS Saundby Ponds LWS Bole Ings Flood Pasture LWS Mother Drain, Upper Ings LWS West Burton Meadow LWS Lea Meadow LWS	County	Yes	No - None of these LWS would be affected by disturbance impacts as they are either too distant from the Site, or are separated by buffers to disturbance, such as dense scrub/woodland habitat.	Yes
Semi-improved neutral grassland	Local	Unlikely - There are no screening assessment criteria available.	n/a	No
Swamp (reedbed) associated with ash lagoons	Local	Unlikely - There are no screening assessment criteria available. Wetland habitats are less susceptible to air quality impacts.	n/a	No

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during operation		Scoped into EcIA?
		Air quality impacts	Disturbance impacts (noise, vibration, artificial light)	
River Trent	Local	Unlikely - Significant air quality impacts do not occur on moving water bodies due to dilution.	n/a	No
Great crested newt	County	n/a	Unlikely - This species is less susceptible to indirect disturbance impacts.	No
Bats	County	n/a	Yes	Yes
Badger	The assessment of impacts and effects on badger during the operation phase is included within a separate confidential appendix (**Appendix 9D**: Badger Survey Report (ES Volume II)).			
Grass snake	Local	n/a	Unlikely - There is no reasonable likelihood that localised disturbances during operation would have an adverse effect on the conservation status of grass snake in the local area.	No
Cetti's warbler	Regional	n/a	No - This species was found within the West Burton Reedbed LWS, which is located approximately 200m to the south of the Proposed Power Plant Site and is already subject to operational disturbance associated with WBB Power Station, located approximately 100m to the west.	No

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during operation		Scoped into EcIA?
		Air quality impacts	Disturbance impacts (noise, vibration, artificial light)	
Red and Amber list passerines associated with scrub and woodland habitat: Cuckoo, song thrush, tree sparrow, linnet, bullfinch, dunnock, willow warbler	Local	n/a	Unlikely - Occasional sources of noise/vibration during the operational phase, such as engines starting or routine maintenance works, may cause localised and temporary disturbance to breeding birds, but this would not adversely affect the conservation status of local bird populations, especially as the birds present are already habituated to a similar level of disturbance from the existing operational West Burton Power Station.	No
Amber list species associated with wetland habitat: Reed bunting, mute swan	Local	n/a	Unlikely -.Occasional sources of noise/vibration during the operational phase, such as engines starting or routine maintenance works, may cause localised and temporary disturbance to breeding birds, but this would not adversely affect the conservation status of local bird populations, especially as the birds present are already habituated to a similar level of disturbance from the existing operational West Burton Power Station.	No
Otter	District	n/a	No - The Proposed Power Plant Site would be located approximately 200m from the River Trent and any disturbance would be buffered by	No

Ecological feature	Value	Potential effect on ecological feature as a result of impacts during operation		Scoped into EcIA?
		Air quality impacts	Disturbance impacts (noise, vibration, artificial light)	
			the woodland habitats associated with West Burton Power Station LWS.	
Brown hare	Local	n/a	Unlikely - There is no reasonable likelihood that localised disturbances during operation would have an adverse effect on the conservation status of brown hare in the local area, especially given that the animals using the Site are already habituated to disturbance from existing operations.	No
Key: n/a = impact is not applicable to the ecological feature, for example noise impacts on habitat features. No = no pathway for the impact to result in an effect on the ecological feature. Unlikely = impact pathway exists, but there is no reasonable likelihood that it would result in an effect on the ecological feature following the implementation of development design and impact avoidance measures. Yes = impact has the potential to result in an effect on the ecological feature.				

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experience lower nitrogen deposition than the West Burton Power Station LWS; therefore the above assessment represents the worst-case.

9.6.54 Acid deposition Critical Loads are not defined for the above habitat types; therefore, no assessment has been possible.

9.6.55 The maximum PC from any of the operational scenarios would be less than the annual mean objective at the worst-case LWS. Therefore, operational emissions would not result in an adverse effect on the structure or function of habitats associated with LWS of county value and the predicted effect is neutral and not significant.

Bats

9.6.56 Operation of the Proposed Development would result in an increase in levels of background noise and artificial light within the Proposed Power Plant Site. The impact of disturbance on adjacent habitats, such as woodland associated with West Burton Power Station LWS, would be minimised as far as reasonably practicable, for example through sensitive lighting design in accordance with the Lighting Strategy (**Application Document Ref. 7.4**), proposed to be secured by a Requirement of the draft DCO (**Application Document Ref. No. 2.1**), though a degree of disturbance would remain.

9.6.57 The effect of disturbance on foraging bats would differ between species and may result in a slight reduction in usage of adjacent habitats by light sensitive species, such as *Myotis* bats. However, bats foraging in this area currently are already habituated to light and noise disturbance from WBB Power Station, and given the amount of optimal woodland and wetland foraging habitat in the surrounding area, any localised displacement of bats in the vicinity of the Proposed Development is unlikely to have an adverse effect on the conservation status of any of the bat populations present. The predicted effect on the bat species assemblage of county value is therefore neutral and not significant.

Decommissioning

9.6.58 Impacts associated with the decommissioning phase of the Proposed Development are likely to be of a similar nature to those associated with the construction phase and as a result the potential effects on ecological features are not anticipated to differ significantly from those predicted at construction. The extent of habitat loss that is likely to be required during decommissioning is likely to be much less than at construction, and the resulting effects on ecological features are therefore likely to be reduced. As described in paragraph 9.5.20, appropriate surveys and impact avoidance measures are proposed to be secured by a Requirement of the draft DCO (**Application Document Ref. No. 2.1**).

9.7 Mitigation and Enhancement Measures

9.7.1 A significant adverse effect on great crested newt populations at the Site is predicted during the construction phase, due to the temporary and permanent loss of terrestrial habitat that would result from the Proposed Development. The loss of habitat would reduce the availability of suitable foraging areas, refuge sites and hibernation sites in the vicinity of breeding ponds, and this could adversely affect the conservation status of the newt populations at the Site. Direct impacts on newts (killing/injury) during site clearance and construction works would be avoided with the implementation of the measures outlined in **Section 9.5**.

9.7.2 Proposals for biodiversity management and enhancement of habitats at the Site are summarised below and illustrated on **Figure 9.1** (ES Volume III). Full details are provided in the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**). The proposals have been designed to compensate for the loss of habitat to the Proposed Development, in order to ensure no net loss of biodiversity (as calculated using The Biodiversity Metric ~~the Defra offsetting metric~~2.0 (Ref 9-19)). The proposals have also been designed to restore and enhance habitat for great crested newts to compensate for the temporary and permanent loss of habitat to the Proposed Development, including the habitat within the footprint of the Proposed Power Plant Site that was created as part of the WBB Power Station Landscape and Creative Conservation Plan for the benefit of great crested newts and other species. They include the following:

- management of existing habitats in the north of the Site to maintain and diversify mosaics of scrub, grassland and reedbed habitat (Areas 1 and 3 on **Figure 9.1** (ES Volume III));
- management of existing areas of scrub to the north of Wheatley Beck to improve their wildlife value, including thinning, diversification and creation of glades (Area 4 on **Figure 9.1** (ES Volume III)). Groups of native trees of local provenance would also be planted in Area 4 to enhance existing boundary habitats and improve habitat connectivity;
- botanical enhancement and ongoing management of existing PFA mounds within Bole Round in the north of the Site, which were capped and seeded with semi-improved neutral grassland as a condition of Section 36 consent for WBB Power Station (Area 5 on **Figure 9.1** (ES Volume III)). The aim would be to enhance the ecological value of these grassland areas by increasing the proportion and diversity of wildflowers in the sward;
- re-location of the artificial hibernacula dismantled within the Proposed Power Plant Site to areas of retained habitat to the north of the Site (Areas 1 to 4 on **Figure 9.1** (ES Volume III)). Additional habitat piles and hibernacula would be constructed in these areas using arisings (logs, turf) generated during clearance of the Site to provide additional opportunities for refuge and hibernation for newts and other species; and

- all habitats that are temporarily removed to facilitate construction, including those within the construction laydown area, northern/southern drainage connection corridors (if chosen) and electricity connection route, would be re-instated as soon as reasonably practicable upon completion of construction works. In most cases, like for like habitat replacement would be undertaken. However, where feasible, habitats of higher ecological value will be planted to provide benefits for biodiversity (for example within Area 2 on **Figure 9.1** (ES Volume III).

9.7.3 Further details on habitat restoration and enhancement proposals for great crested newts will be included in an EPSM licence application to Natural England prior to construction.

9.7.4 Through the mitigation measures proposed, it is considered that the effect of the Proposed Development on great crested newt populations at the Site will be reduced to neutral (not significant).

9.7.5 No significant adverse or beneficial effects are predicted on any other ecological features during the construction, operation or decommissioning phases of the Proposed Development; all mitigation measures that would be necessary to ensure compliance with protected species legislation, as well as good practice measures to safeguard animal welfare, are included within the development design and impact avoidance measures, detailed in **Section 9.5**.

Monitoring

9.7.6 The measures proposed to avoid and reduce, where possible, significant adverse effects on ecological features are set out in **Sections 9.5 and 9.7** of this chapter. The monitoring strategies to track the delivery and success of proposed mitigation during the construction phase are set out in the Framework CEMP (**Application Document Ref. No. 7.3**). In particular, an Ecological Clerk of Works would be employed to manage the delivery of all necessary mitigation, including that mitigation which would be completed under protected species mitigation licences.

9.7.7 Monitoring would also be necessary during operation to ensure the successful establishment and management of habitats restored or enhanced during/after construction. Further details are provided in the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**). Monitoring may also be a condition of protected species licensing, in order to assess whether the proposed mitigation and enhancement measures are likely to have maintained the favourable conservation status of the species concerned.

9.8 Limitation or Difficulties

9.8.1 There are no limitations to this EcIA. Baseline conditions and relevant ecological features have been determined using appropriate methods and sufficient data has been collected to allow identification and assessment of the likely impacts and effects of the Proposed Development on ecology.

9.9 Summary of Likely Significant Residual Effects

9.9.1 A significant adverse effect on great crested newts was predicted during the construction phase due to the temporary and permanent loss of terrestrial habitat. With the implementation of the habitat restoration and enhancement proposals outlined in **Section 9.7**, no adverse effect on the conservation status of great crested newts is anticipated. The residual effect on the great crested newt population of county value is therefore predicted to be neutral and not significant.

9.10 References

Ref 9-1 HM Government (1981) *Wildlife and Countryside Act 1981 (as amended).*

Ref 9-2 HM Government (2000) *Countryside and Rights of Way Act 2000 (as amended).*

Ref 9-3 HM Government (2006) *Natural Environment and Rural Communities Act 2006 (as amended).*

Ref 9-4 HM Government (2018) *The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018.*

Ref 9-5 HM Government (1992) *Protection of Badgers Act 1992.*

Ref 9-6 HM Government (2017) *The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.*

Ref 9-7 HM Government (2006) *Animal Welfare Act 2006.*

Ref 9-8 Department for Energy and Climate Change (2011) *National Policy Statement for Energy (EN-1).*

Ref 9-9 Ministry of Housing, Communities and Local Government (2019) *National Planning Policy Framework*.

Ref 9-10 The Bassetlaw District Council (2011) *Core Strategy and Development Management Policies Development Plan Document for Bassetlaw.*

Ref 9-11 The Bassetlaw District Council (2011) *Draft Local Plan.*

Ref 9-12 Sturton Ward Planning Group (2015) The Sturton Ward Neighbourhood Plan 2015-2030.

Ref 9-12 Joint Nature Conservation Committee and Defra (2012) *UK Post-2010 Biodiversity Framework.*

Ref 9-14 Joint Nature Conservation Committee (1994) *UK Biodiversity Action Plan.*

Ref 9-15 Department for Environment, Food and Rural Affairs (2011) *Biodiversity 2020, A Strategy for England's Wildlife and Ecosystem Services.*

Ref 9-16 Nottinghamshire Biodiversity Action Group. Taylor, J.K. (ed). (1998). *Local Biodiversity Action Plan for Nottinghamshire.* Nottinghamshire County Council.

Ref 9-17 CIEEM (2016) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, second Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

Ref 9-18 Eaton, M., Aebischer, N., Brown, A., Hearn, R., lock, L. Musgrove, A., Noble, D., Stroud, D. and Gregory, R. (2015). *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds 108. December 2015. 708-746.

Ref 9-19 Natural England (2019) *The Biodiversity Metric 2.0.* Available online at: http://publications.naturalengland.org.uk/publication/5850908674228224~~Defra (2012) *Biodiversity Offsetting Pilots – Technical Paper: the metric for the biodiversity offsetting pilot in England.* Defra, London~~.