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# West Burton C (Gas Fired Generating Station)

The West Burton C (Generating Station) Order

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

Environmental Impact Assessment: Environmental  
Statement – Non-Technical Summary

The Planning Act 2008

The Infrastructure Planning (Environmental Impact Assessment)  
Regulations 2009 (as amended)

Regulations – 6(1)(b) and 8(1)

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

## DOCUMENT HISTORY

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## GLOSSARY

ABBREVIATION	DESCRIPTION
AADT	Annual Average Daily Traffic Flow – a measure of the total volume of vehicle traffic of a highway or road for a year divided by 365 days.
AIL	Abnormal Indivisible Load – a load that cannot be broken down into smaller loads for transport without undue expense or risk of damage. It may also be a load that exceeds certain parameters for weight, length and width.
AOD	Above Ordinance Datum – a spot height (an exact point on a map) with an elevation recorded beside it that represents its height above a given datum.
Applicant	EDF Energy (Thermal Generation) Limited.
BAT	Best Available Techniques – available techniques which are the best for preventing or minimising emissions and impacts on the environment. BAT is required for operations involving the installation of a facility that carries out industrial processes. Techniques can include both the technology used and the way an installation is designed, built, maintained, operated and decommissioned.
BDC	Bassetlaw District Council – the local planning authority with jurisdiction over the area within which the West Burton Power Station site and Proposed Development Site (the Site) are situated.
BEIS	The Department for Business, Energy and Industrial Strategy.
BPM	Best Practicable Means – Actions undertaken and mitigation measures implemented to ensure that noise levels are minimised to be as low as practicable.
CCGT	Combined Cycle Gas Turbine – a CCGT is a combustion plant where a gas turbine is used to generate electricity and the waste heat from the flue-gas of the gas turbine is converted to useful energy in a heat recovery steam generator (HRSG), where it is used to generate steam. The steam then expands in a steam turbine to produce additional electricity.
CCS	The Considerate Constructors Scheme – a non-profit making, independent organisation founded in 1997 by the construction industry to improve its image. The scheme promotes good construction site practice and provides codes of considerate practice which commit the users of registered sites to be considerate and

ABBREVIATION	DESCRIPTION
	good neighbours, respectful; environmentally conscious, responsible and accountable.
CEMP	Construction Environmental Management Plan – a plan to outline how a construction project will avoid, minimise or mitigate effects on the environment and surrounding area.
CTMP	Construction Traffic Management Plan – a plan outlining measures to organise and control vehicular movement on a construction site so that vehicles and pedestrians using site routes can move around safely.
CWTP	Construction Workers Travel Plan – a plan managing and promoting how construction workers travel to a particular area or organisation. It aims at promoting greener, cleaner travel choices and reducing reliance on the private car.
DCO	Development Consent Order - made by the relevant Secretary of State pursuant to The Planning Act 2008 to authorise a Nationally Significant Infrastructure Project. A DCO can incorporate or remove the need for a range of consents which would otherwise be required for a development. A DCO can also include rights of compulsory acquisition.
DEMP	Decommissioning Environmental Management Plan – a site-specific plan developed to ensure that appropriate environmental management practices are followed during the decommissioning phase of a project and to detail all remediation, site control, and monitoring activities that will continue once the decommissioning activities are completed.
DTMP	Decommissioning Traffic Management Plan – a plan outlining measures to organise and control vehicular movements associated with the decommissioning phase to minimise impacts upon local highways.
EEA	European Economic Area
EIA	Environmental Impact Assessment – a term used for the statutory process that assesses environmental consequences (positive or negative) of a project prior to the decision to move forward with the proposed development. The EIA process concludes whether likely significant effects on the environment are expected.
ELVs	Emission Limit Values – emission limit values based on the Best Available Techniques.
EMF	Electromagnetic fields – a physical field produced by electrically charged objects.
EMS	Environmental Management System – the management of an organisation’s environmental programs in a comprehensive, systematic, planned and documented manner.
EPSM	European Protected Species Mitigation – in instances where projects are likely to have an impact on European Protected Species, mitigation must be undertaken and a licence granted by

ABBREVIATION	DESCRIPTION
	Natural England to provide a derogation to the law.
ES	Environmental Statement – a report in which the process and results of an Environment Impact Assessment are documented.
FBA	Furnace Bottom Ash – the 'coarse' ash fraction produced by coal-fired power stations when pulverised fuel is burned at high temperatures and pressures.
GHG	Greenhouse Gas – Atmospheric gases such as carbon dioxide, methane, chlorofluorocarbons, nitrous oxide, ozone, and water vapour that absorb and emit infrared radiation emitted by the Earth's surface, the atmosphere and clouds.
GPP	Guidance for Pollution Prevention – a series of guidance documents for environmental good practice for the UK.
ha	See Hectare
Hectare	A metric unit of measurement, equal to 2.471 acres or 10,000 square metres.
HER	Historic Environment Record – a record of all known archaeological finds and features and historic buildings and historic /landscape features, relating to all periods from the earliest human activity to the present day; maintained by each County and Unitary Authority in the United Kingdom.
HGV	Heavy Goods Vehicle – vehicles with a gross weight in excess of 3.5 tonnes.
HRSG	Heat Recovery Steam Generator – an energy recovery heat exchanger that recovers heat from a hot gas stream. It produces steam that can be used in a process (cogeneration) or used to drive a steam turbine (combined cycle).
IDBs	Internal Drainage Boards – a type of operating authority with permissive powers to undertake work to secure clean water drainage and water level management within drainage districts.
IED	Industrial Emissions Directive, EU Directive 2010/75/EU – European Union Directive committing member states to control and reduce the impact of industrial emissions on the environment.
LDS	Local Development Scheme – a requirement under section 15 of the Planning and Compulsory Purchase Act 2004, it sets out a local authority's work programme in relation to main planning policy documents.
LEP	Local Enterprise Partnerships are voluntary partnerships between local authorities and businesses.
LWS	Local Wildlife Site – an area important for the conservation of wildlife, these are non-statutory sites of nature conservation value that have been designated 'locally'. These sites are referred to differently between counties with common terms including site of importance for nature conservation, county wildlife site, site of biological importance, site of local importance and sites of metropolitan importance.

ABBREVIATION	DESCRIPTION
MW	Megawatt – unit of power.
NCC	Nottinghamshire County Council – the county council with jurisdiction over the area within which the West Burton Power Station Site and Proposed Development Site (the Site) are situated.
NPPF	<p>The National Planning Policy Framework – Policy Framework which first came into effect in March 2012 (with some transitional arrangements) replacing the majority of national planning policy other than NPSs. A revision of the NPPF was published in July 2018 by the Ministry of Housing, Communities and Local Government and updated again in February 2019.</p> <p>The NPPF is part of the Government's reform of the planning system intended to make it less complex, to protect the environment and to promote sustainable growth. It does not contain any specific policies on Nationally Significant Infrastructure Projects but its policies may be taken into account in decisions on DCOs if the Secretary of State considers them to be 'relevant'.</p>
NPSs	National Policy Statements – statements produced by Government under the Planning Act 2008 providing the policy framework for Nationally Significant Infrastructure Projects. They include the Government's view of the need for and objectives for the development of Nationally Significant Infrastructure Projects in a particular sector such as energy and are used to determine applications for such development.
NSER	No Significant Effects Report – a report describing the findings of the Habitats Regulations Assessment (HRA).
NSIP	<p>Nationally Significant Infrastructure Projects – defined by the Planning Act 2008 and covers projects relating to energy (including generating stations, electric lines and pipelines); transport (including trunk roads and motorways, airports, harbour facilities, railways and rail freight interchanges); water (dams and reservoirs, and the transfer of water resources); waste water treatment plants and hazardous waste facilities.</p> <p>These projects are only defined as nationally significant if they satisfy a statutory threshold in terms of their scale or effect.</p>
NSR	Noise Sensitive Receptors – locations or areas where dwelling units or other fixed, developed sites of frequent human use occur which may be sensitive to noise impacts.
NTS	Non-Technical Summary – a summary of the Environmental Statement written in non-technical language for ease of understanding.
OCGT	Open Cycle Gas Turbine – a combustion turbine plant fired by gas or liquid fuel to turn a generator rotor that produces electricity.
PEI	Preliminary Environmental Information –the information referred to in Part 1 of Schedule 4 of the EIA Regulations that has been reasonably compiled by the applicant, and is reasonably required to assess the environmental effects of a development project.

ABBREVIATION	DESCRIPTION
PFA	Pulverised Fuel Ash – a by-product of pulverised fuel fired power stations.
SSSI	Site of Special Scientific Interest - nationally designated Sites of Special Scientific Interest, an area designated for protection under the Wildlife and Countryside Act 1981 (as amended), due to its value as a wildlife and/or geological site.
TTWA	Travel to Work Area – statistical tool used by UK Government agencies and local authorities to indicate an area where the population would generally commute to a larger town or city for employment purposes.
WBA	West Burton A – the existing coal-fired power station within the West Burton Power Station Site, owned and operated by the Applicant.
WBB	West Burton B – the existing gas-fired power station, using Combined Cycle Gas Turbine (CCGT) technology, owned and operated by the Applicant.
WLDC	West Lindsey District Council – the adjoining local planning authority to Bassetlaw District Council in which the West Burton Power Station Site and Proposed Development Site (the Site) are situated.
WSI	Written Scheme of Investigation – documents which set out the approach to undertaking archaeological monitoring of ground investigation works.
ZTV	Zone of Theoretical Visibility – a computer generated tool to identify the likely (or theoretical) extent of visibility of a development.

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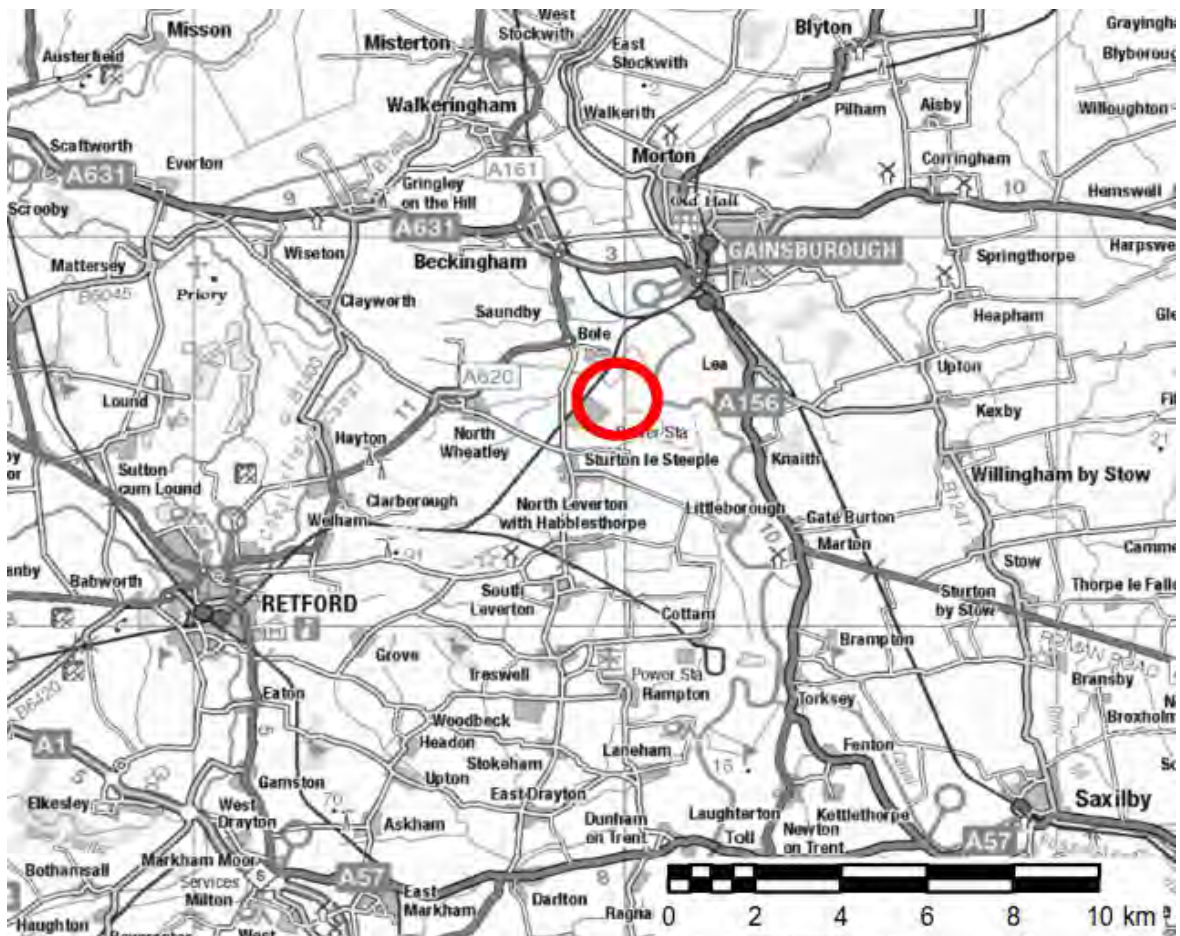


# 1. Introduction

## 1.1 Overview

- 1.1.1 This document presents a Non-Technical Summary (NTS) of the Environmental Statement (ES) that has been prepared on behalf of EDF Energy (Thermal Generation) Limited (hereafter referred to as the Applicant) in relation to an application for development consent (the Application) for the construction, operation and decommissioning of a gas fired generating station (the Proposed Development) near Gainsborough, Nottinghamshire. The Application has been submitted to the Planning Inspectorate, with the decision whether to grant a Development Consent Order (DCO) being made by the Secretary of State pursuant to the Planning Act 2008 (2008 Act). The ES presents the findings of the Environmental Impact Assessment (EIA) undertaken in connection with the Proposed Development.
- 1.1.2 The Proposed Development and the land within the Application boundary (referred to as the Site) are described in **Sections 3** and **4** of this NTS. The location and Site boundary are shown on **Figures NTS1** and **NTS2**.

**Figure NTS1: Site location**



**Figure NTS2: The Order Limits**



- 1.1.3 The purpose of this NTS is to describe the Proposed Development and provide a summary, in non-technical language, of the key findings of the ES. Technical details are provided within the ES (ES Volume I: Main Report, ES Volume II: Technical Appendices and ES Volume III: Figures).
- 1.1.4 The ES has been prepared to comply with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended) (the 2009 EIA Regulations) (refer to **Section 1.5** of this NTS). EIA is a process used to identify and assess the potentially significant adverse and beneficial effects of projects, and outline mitigation or management measures that can be incorporated within the development proposals to reduce (or enhance) these effects. The 2009 EIA Regulations apply to this project, rather than the version of the EIA Regulations which came into force in 2017 (2017 EIA Regulations) because of the timing of when a Scoping Opinion request was made by the Applicant to the Planning Inspectorate.

## 1.2 The Applicant

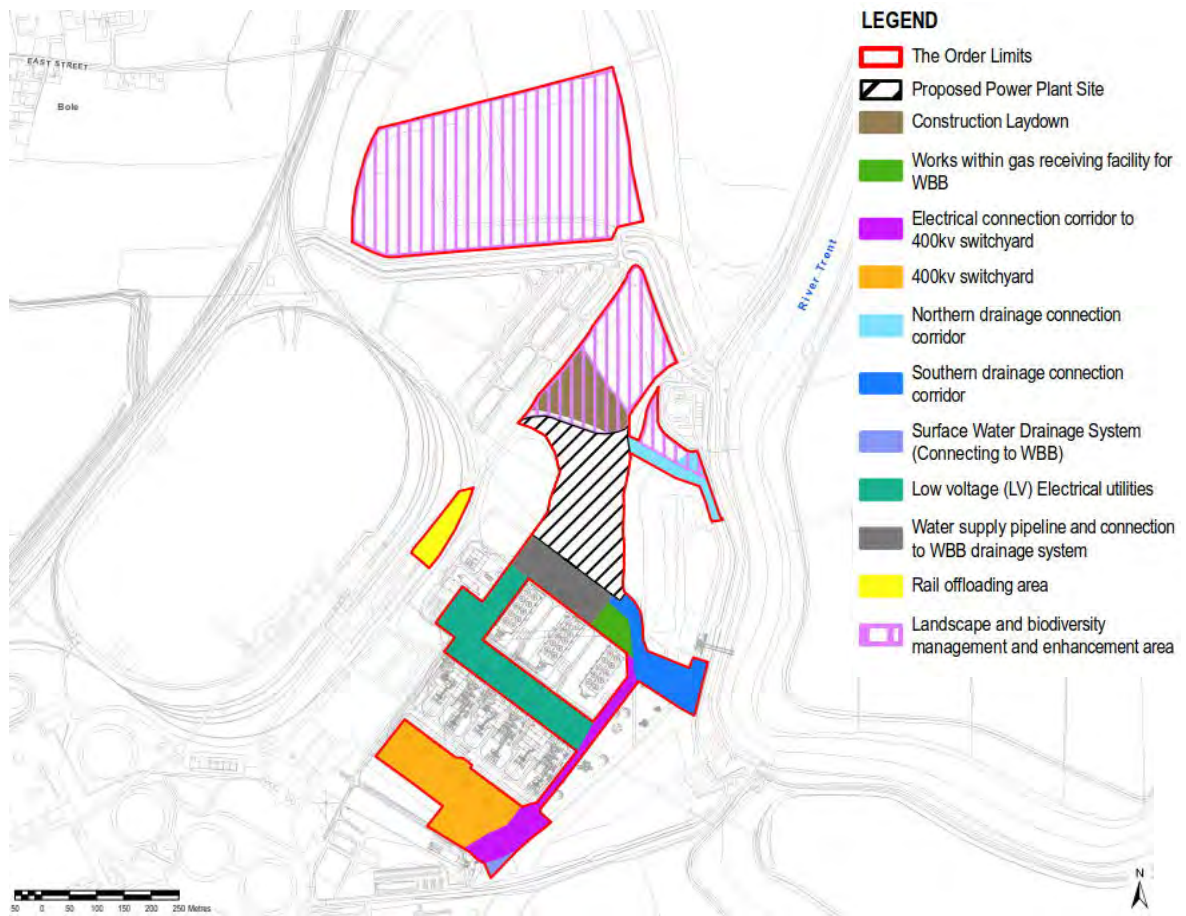
- 1.2.1 The Applicant is EDF Energy (Thermal Generation) Limited which owns and operates the two existing power stations at the West Burton Power Station site, West Burton A (WBA) Power Station and West Burton B (WBB) Power Station, as well as the nearby Cottam Power Station.

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

### 1.3 Proposed Development

- 1.3.1 The Proposed Development comprises the construction, operation (including maintenance) and decommissioning of a gas fired generating station with a gross electrical output of up to 299 Megawatts (MW); comprising up to five open cycle gas turbine (OCGT) units, depending on the technology selected at the detailed design stage.
- 1.3.2 The Site is located within the wider West Burton Power Station site, to the north of WBB Power Station. The Site area is approximately 32.8 hectares (ha), of which approximately 16.3ha is for built development and the construction laydown area, with a further approximately 16.5ha of land for ecology and landscaping works. The Site area incorporates corridors for the construction of the proposed gas and grid connections into infrastructure on the existing WBB Power Station site. The exact route of each connection within that corridor will not be finalised until the detailed design stage of the Proposed Development. The proposed generating station itself would occupy approximately 3.4ha of land, referred to as the 'Proposed Power Plant Site' (as shown on **Figure NTS3**). The Proposed Power Plant Site also encompasses ancillary buildings/structures and the grid and gas connections, discussed above. Part of the Site is currently grassland and young planted scrub, whilst parts of the Site were previously used for ash disposal for the WBA Power Station and construction laydown for the WBB Power Station.
- 1.3.3 The Proposed Development would contribute to vital new energy infrastructure required to contribute to security of electricity supply to the UK and would be available to operate in accordance with energy market requirements, including those in respect of any Capacity Market contract.
- 1.3.4 Environmental impacts that could arise from the Proposed Development have been studied as part of the EIA process, the results of which are presented within the ES and summarised in this NTS. The baseline (current) conditions for the assessment have been obtained from measurements and studies in and around the Site. This is explained further in **Chapter 2: Assessment Methodology** (ES Volume I: Main Report) and in the methodology section of each technical assessment chapters (**Chapters 6-16** (ES Volume I: Main Report)).

**Figure NTS3: Indicative work areas referred to in the Environmental Statement**



## 1.4 The Development Consent Order Process

1.4.1 The Proposed Development is classed as a 'Nationally Significant Infrastructure Project' (NSIP) of the 2008 Act, as it is an onshore generating station in England that would have a generating capacity greater than 50 megawatts electrical (50MWe) output. As such, a DCO is required to authorise the Proposed Development, in accordance with the 2008 Act.

1.4.2 An application for a DCO for the Proposed Development has been submitted to the Planning Inspectorate. Subject to the Application being accepted, the Planning Inspectorate will then examine the Application and make a recommendation to the Secretary of State, who then decides whether to grant a DCO.

## 1.5 The EIA Process

1.5.1 The Proposed Development falls within Schedule 2 of the 2009 EIA Regulations as it constitutes 'Industrial installations for the production of electricity, steam and hot water'. The Applicant formally provided notification that an ES would be prepared in respect of the Proposed Development. Therefore, in accordance with 2009 EIA Regulations, the Proposed Development is considered 'EIA

*development.* This means that the application for development consent must be accompanied by an environmental impact assessment (EIA). The ES summarises the results of the EIA work undertaken.

- 1.5.2 The issues that the Applicant considered the EIA should address were identified in the EIA Scoping Report submitted to the Planning Inspectorate in April 2017 (**Appendix 1A** (ES Volume II: Appendices)). The Secretary of State's Scoping Opinion was received on 7th June 2017, including the formal responses received by the Planning Inspectorate from consultees (**Appendix 1B** (ES Volume II: Appendices)). Key issues raised in the Scoping Opinion have been taken into account during the EIA, and are reported at the start of each technical chapter (**Chapters 6-16** (ES Volume I: Main Report)).
- 1.5.3 The Applicant has taken into account additional requirements associated with the 2017 EIA Regulations. However, the Secretary of State agreed via the Scoping Opinion that a standalone chapter on the vulnerability of the Proposed Development to risks of major accidents and/or disasters could be scoped out (not included in the ES). Instead, potential risks such as fuel spillages, fires and abnormal issues are addressed under topic specific **Chapters 6-15** (ES Volume I: Main Report). Potential effects of the Proposed Development on human health are dealt with in topic specific chapters within the ES (ES Volume I: Main Report) and reported within **Appendix 13A: Human Health** (ES Volume II: Appendices).

## 1.6 Consultation

- 1.6.1 Consultation is an important tool that helps to develop proposals and assessments that support an application for development consent, particularly the EIA process. Consultation is required to inform stakeholders, regulators and the local community about a Proposed Development and identify any areas of potential concern. The 2008 Act requires applicants for development consent to carry out (statutory) pre-application consultation on their proposals.
- 1.6.2 The Applicant has adopted a three stage approach to pre-application consultation on the Proposed Development. An informal, non-statutory consultation stage was carried out between 5 July and 2 August 2017, whilst the formal (statutory) consultation stage ran between 7 September and 16 October 2017. Subsequently, post-statutory consultation was undertaken between March and April 2019 with key stakeholders and Parish Councils to update consultees on the proposals and undertake additional engagement. Feedback from the consultation was used during the finalisation of the Application and this ES.
- 1.6.3 The approach to consultation and how the Applicant has had regard to the responses received is documented within the Consultation Report (**Application Document Ref. 4.1**) and summarised in each topic chapter of the ES (ES Volume I: Main Report).

## 2. EIA Assessment Methodology

### 2.1 General Assessment Approach

2.1.1 Through submission of the EIA Scoping Report to the Planning Inspectorate and subsequent consultation with a number of statutory consultees, the topics assessed within the EIA were agreed, as follows:

- Air Quality;
- Traffic and Transport;
- Noise and Vibration;
- Ecology;
- Landscape and Visual Amenity;
- Ground Conditions and Hydrogeology;
- Flood risk, Hydrology and Water Resources;
- Socio-economics (including Health);
- Cultural Heritage;
- Sustainability, Waste and Climate Change; and
- Cumulative and Combined Effects.

2.1.2 The EIA scoping process concluded that aviation, electronic interference (TV reception) and accidental events/health and safety could be scoped out of the EIA and that waste would not require a standalone chapter, but rather form part of a Sustainability, Waste and Climate Change chapter.

2.1.3 The assessment presented in the ES, where possible, uses standard methodologies based on legislation, recognised standards and accepted industry criteria. Methodologies differ between each technical topic, with the method adopted set out within each topic chapter of the ES (ES Volume I: Main Report).

2.1.4 The purpose of the EIA process is to predict the changes (or 'impacts') that may occur to the environment (including human receptors) as a result of the Proposed Development. The changes are compared to the environmental conditions that would have occurred without the Proposed Development (the baseline) and the 'future baseline' is also considered (the likely condition of the local environment prior to construction, again without the Proposed Development). Other developments that are already constructed and operating (such as the battery storage project on the WBB Power Station site, which commenced operation in January 2018) are accounted for in the baseline conditions established for the main assessments within **Chapters 6-15** of the ES (ES Volume I: Main Report).

2.1.5 The EIA process identifies potentially sensitive 'receptors' that may be affected by these changes (e.g. people living near the Proposed Development, local flora and

fauna) and assesses the extent to which these receptors may be affected by the predicted changes. In particular, and in accordance with the 2009 EIA Regulations, whether or not the receptors are likely to experience a 'significant effect'.

- 2.1.6 The environmental impacts and effects of the Proposed Development are assessed at key stages in its construction and operation (including maintenance and use) and, where possible and relevant, its eventual decommissioning.

## 2.2 Development Design, Impact Avoidance and Mitigation

- 2.2.1 The design process for the Proposed Development has been heavily influenced by the findings of early environmental appraisals and the EIA process. A number of measures have been incorporated into the concept design to avoid or minimise environmental impacts. These measures include those required to comply with legislation and also include current industry best practice guidance which would be adopted, as far as reasonably practicable, during construction, operation and eventual decommissioning of the Proposed Development.
- 2.2.2 Once the likely effects have been identified and quantified, any further mitigation that may be required to mitigate any potentially significant adverse effects identified has been considered. The residual effects (effects remaining after the implementation of mitigation) have then been assessed and are presented in each chapter.

## 2.3 Impact Assessment Methodology and Significance Criteria

- 2.3.1 Impacts are changes arising from the Proposed Development, and consideration of these impacts on the environment allows the identification of associated effects. The effects are then classified - major, moderate, minor and negligible, and adverse, neutral or beneficial. The classification of effects takes into account aspects such as (but not limited to) extent (how widespread an effect may be), duration (when and for how long an effect may occur) and the number and sensitivity of receptors affected. Each effect has been classified both before and after mitigation measures have been applied.
- 2.3.2 In general, the classification of an effect is based on the magnitude (scale) of the impact and sensitivity or importance of the receptor, using the matrix shown in **Table 2-1**. Where there are deviations away from this matrix (due to the technical guidance for a specific assessment topic) this is highlighted within the relevant technical chapter within the ES (ES Volume I: Main Report) and the reason for the variation explained.

**Table 2-1: Classification of effects matrix**

Magnitude of impact	Sensitivity/importance of receptor			
	High	Medium	Low	Very low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very low	Minor	Negligible	Negligible	Negligible

2.3.3 In the context of the Proposed Development, short-term effects are generally considered to be those associated with the construction and/or decommissioning phases, which cease when those works are completed. Long-term effects are typically those associated with the operational period. Effects may also be permanent (irreversible) or temporary (reversible) and direct or indirect.

2.3.4 Moderate and major effects are generally considered to be ‘significant’ for the purposes of the 2009 EIA Regulations, in accordance with standard EIA practice.

## 2.4 Transboundary Effects

2.4.1 The Scoping Opinion recommended consideration be given to discharges to air and water, potential impacts on migratory species and to impacts on shipping and fishing areas, when considering transboundary (beyond country border) effects.

2.4.2 Taking into account the impacts predicted to arise from the Proposed Development, set out in the ES (ES Volume I: Main Report) and given the distance to the nearest European Economic Area (EEA) state (Republic of Ireland at over 350km to the west and the Netherlands at over 375km to the east), the likelihood of significant effects on the environment of another EEA state are considered negligible. Therefore, significant transboundary effects associated with the Proposed Development are not anticipated and are not considered further.

## 3. Description of the Site and its Surroundings

### 3.1 Site Details

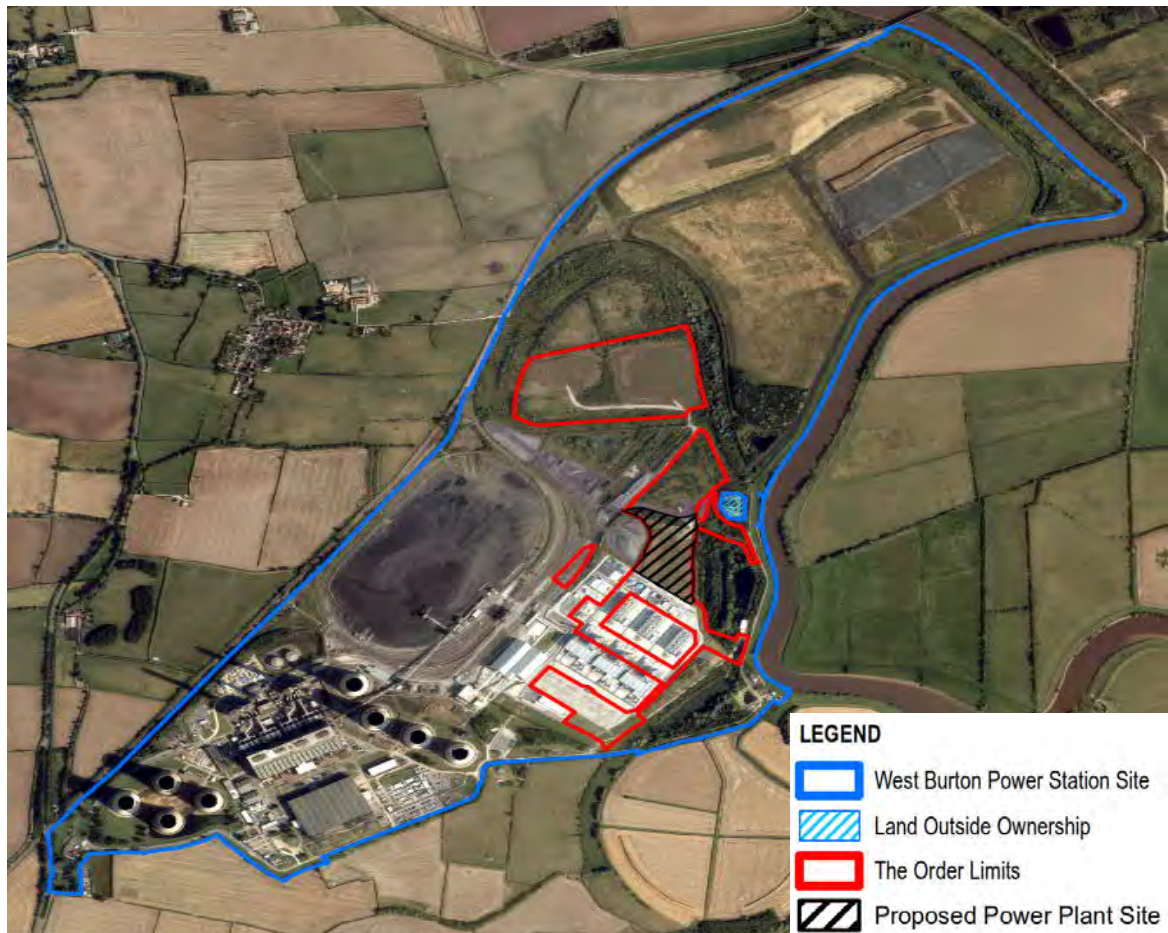
3.1.1 The Site includes land within the boundary of the existing West Burton Power Station site near Gainsborough, Nottinghamshire. The land is owned by the Applicant. The Site is centred on national grid reference 480275, 386241 - the middle of the area where the main components of the Proposed Development would be sited (referred to herein as ‘the Proposed Power Plant Site’). The Site boundary and areas within the Site can be seen in **Figure NTS4**.



## 3.2 The Existing West Burton Power Station site

- 3.2.1 The West Burton Power Station site is located approximately 3.5km to the south-west of the town of Gainsborough and approximately 1km to the north-east of Sturton-le-Steeple. The nearest settlement is the village of Bole, located approximately 1km to the north-west of the Proposed Power Plant Site.
- 3.2.2 The West Burton Power Station site lies close to the junction of the A631/A620 and is accessed by a C-class (minor) road (the C2), which joins the A620 at Bole Corner.
- 3.2.3 The West Burton Power Station site is located in Nottinghamshire, close to the border with Lincolnshire, with the River Trent forming part of the eastern boundary of the West Burton Power Station site. The Site falls within the administrative area of Bassetlaw District Council (BDC), close to the border with West Lindsey District Council (WLDC). The West Burton Power Station site currently includes two power stations, owned and operated by the Applicant (WBA and WBB Power Stations).
- 3.2.4 WBA Power Station is a coal fired power station, which was commissioned in 1968. It has four coal fired units with two chimney stacks (each 198m high) and eight cooling towers (each 112m high), with cooling water taken from the River Trent. It supplies up to 2,000MW of electricity to the National Grid.
- 3.2.5 To the north of the West Burton Power Station site is the Bole Ings Ash Disposal Site. This is used for the disposal of Pulverised Fuel Ash (PFA), which is produced as a by-product of electricity generation at the WBA Power Station. It forms an extensive area of approximately 83ha.
- 3.2.6 To the east of the WBA Power Station is the WBB Power Station, a combined cycle gas turbine (CCGT) power station, which was commissioned in 2013. It has three units, each having a gas turbine, a heat recovery steam generator (HRSG) and an associated steam turbine, with a combined output capacity of 1,332MW.
- 3.2.7 Together, the WBA and WBB Power Stations provide approximately 270 jobs and support a number of additional contractor jobs on a full-time and part-time basis.

**Figure NTS4: Aerial Photograph with the Order Limits**



### 3.3 The Proposed Development Site

3.3.1 The Site area is approximately 32.8ha of which approximately 16.3ha would be built development and construction laydown area, with a further approximately 16.5ha of land proposed for landscaping and biodiversity management and enhancement works. The proposed generating station itself would occupy an area of approximately 3.4ha. This is shown on **Figure NTS3**.

3.3.2 Several parts together make up the Site, with the different areas of the Site described in turn (**Figure NTS3**):

- Proposed Power Plant Site and auxiliary buildings, structures and equipment;
- construction laydown area;
- gas receiving area (within the Proposed Power Plant Site) with connection to the existing WBB gas receiving facility;
- electricity connection route (partially within the Proposed Power Plant Site) and tie-in to existing WBB Power Station 400kV switchyard;
- new surface water drainage system including connecting into the existing drainage systems on the West Burton Power Station site;

- low voltage electrical and utility connections (including water supply) to connect into WBB Power Station;
- rail offloading laydown area; and
- landscaping and biodiversity management and enhancement area.

3.3.3 Access to the Site would be from the main entrance to the West Burton Power Station site, off Gainsborough Road to the south-west.

### Proposed Power Plant Site

3.3.4 The Proposed Power Plant Site was used to deposit PFA from WBA Power Station in the past and more recently, was used as a construction laydown area for the WBB Power Station. The area currently includes areas of recently seeded and planted grassland, scrub and immature trees, created following the construction of the WBB Power Station.

3.3.5 The Proposed Power Plant Site is bounded:

- to the north by an access road that serves Bole Ings Ash Disposal Site and beyond this, by the proposed construction laydown area;
- to the north-east by the connection via the proposed northern drainage connection corridor into the existing West Burton Power Station drainage system;
- to the east by an area of dense woodland and ponds, which forms part of the West Burton Power Station Local Wildlife Site (LWS), comprising an area of former gravel pits within the power station of biodiversity interest;
- to the south by the WBB Power Station; and
- to the west by an area used for the storage of furnace bottom ash (FBA) and ash processing.

3.3.6 Vegetation within the Proposed Power Plant Site would be removed before construction begins. A landscaping and biodiversity management and enhancement area to replace removed vegetation would be created on suitable land within the Site boundary (see **Chapter 10: Landscape and Visual Amenity** and **Chapter 9: Ecology** (ES Volume I)).

### Construction Laydown Area

3.3.7 The construction laydown area, including contractors' compounds, would be located to the north of the Proposed Power Plant Site and within the Proposed Power Plant Site, where necessary. This land includes grassland and scrub, previously used to deposit PFA from WBA Power Station, as well as a compound for co-ordinating ash disposal activities by WBA Power Station. A sewage treatment plant owned and operated by Severn Trent Water lies approximately 60m to the east of the proposed construction laydown area.

## Gas Connection

- 3.3.8 A connection would be made to the existing gas receiving facility used by and located within WBB Power Station, which lies to the south of the Proposed Power Plant Site. The area currently includes hardstanding and gravelled areas.

## Electricity Connection

- 3.3.9 A new electrical connection route is proposed, linking the Proposed Development with the existing WBB 400kV switchyard. The proposed route runs from the Proposed Development, along the eastern side of the WBB Power Station site and into the existing WBB Power Station switchyard, which is primarily covered in loose stones but includes roads and concrete pads. The WBB Power Station switchyard connects to an existing National Grid 400kV substation located on the WBA Power Station site.

## Surface Water Drainage System

- 3.3.10 A new surface water drainage system including ponds and/or a tank including connection to the existing surface water drainage systems on the West Burton Power Station site is proposed.
- 3.3.11 Three potential drainage options are being considered and have been assessed within the EIA – a northern or southern drainage connection corridor or a connection into the existing WBB Power Station drainage system; all of which would enable the discharge of uncontaminated surface water to the River Trent via the existing WBA Power Station purge line. The Site boundary includes the land required for the northern and southern drainage connection corridors or for connection into the WBB Power Station drainage system (**Figure NTS3**).
- 3.3.12 If chosen, the northern drainage connection corridor would require a surface water drainage pipeline approximately 250m long, which follows an existing road that is used for access to the adjacent Severn Trent Water sewage treatment plant. The corridor stops before, and so does not cross, the flood defences or designated Public Right of Way (PRoW) (West Burton FP4), which follows the western flood embankment of the River Trent.
- 3.3.13 An alternative southern drainage connection corridor has also been identified. This pipeline route (approximately 350m long) would connect the Site to the south-east of the gas receiving facility for the WBB Power Station and pass through an area of semi-improved grassland, scrub, wet ditch and broad-leaved semi-natural woodland which forms part of the LWS. From here, the proposed southern drainage connection corridor would stop near to River Road, north of the WBA Power Station river abstraction pumping station and equipment. Like the northern drainage connection corridor, the route would stop short of the flood defences and West Burton FP4 PRoW.

- 3.3.14 A third option has also been evaluated to connect into the existing WBB Power Station site drainage system to the south of the Proposed Power Plant Site; its feasibility will be dependent on final plant design and the volumes of surface water to be accommodated. This option may include the installation of an oily water separator to the south-east corner of the WBB Power Station site.

### Low voltage and electrical and utility connections to tie-in to WBB Power Station

- 3.3.15 Works are proposed across the Proposed Power Plant Site and within the existing WBB Power Station, in order to connect low voltage electrical equipment, control equipment, metering and other cables and associated switchgear that will be required to the Proposed Development. Land affected mainly comprises the existing WBB Power Station buildings and infrastructure.

### Rail Offloading Laydown Area

- 3.3.16 The rail offloading laydown area is located to the west of the Site, forming part of the rail loop for WBA Power Station. The land is currently unused but could have a concrete pad installed on it to enable construction material deliveries — if this is a feasible option for the construction contractors to use.

### Landscaping and Biodiversity Management and Enhancement Area

- 3.3.17 As part of the development of WBB Power Station, an area was proposed for landscaping and creative conservation after construction of the WBB Power Station, which now includes the footprint for the Proposed Power Plant Site. Commitments in the WBB Power Station consent included restoration of the site to grassland and woodland habitats and planting of a species-rich hedgerow, in order to provide restored habitats that would contain a greater variety of species than the original habitats. Given that the Proposed Development would result in the permanent loss of these newly created habitats, and in order to provide for biodiversity offsetting, enhancement and mitigation for both the permanent and temporary loss of habitat used by protected species, areas of the Site are proposed for landscape and biodiversity management and enhancement (**Figure NTS3**) (**Chapter 9: Ecology** (ES Volume I)).

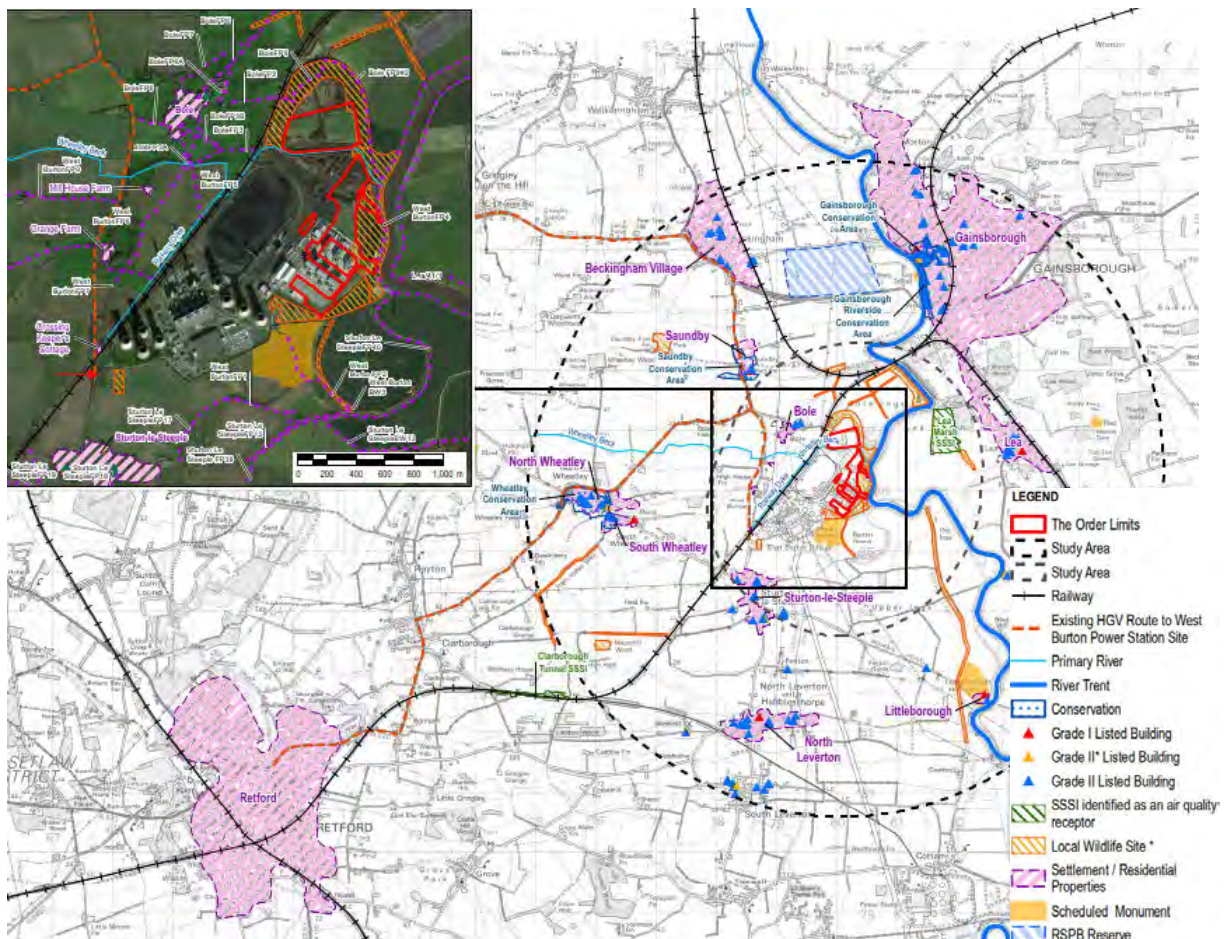
## 3.4 Potential Environmental Receptors within the Surrounding Area

- 3.4.1 A number of environmental receptors have been identified in the vicinity of the Site, as shown on **Figure NTS5**. West of the River Trent are the villages of Bole (approximately 1km north-west), Sturton-le-Steeple (approximately 1km south-west), Saundby (approximately 2.3km north-west), South Wheatley (approximately 3.5km west), North Leverton with Habbleshthorpe (approximately 3.9km south-west) and South Leverton (approximately 5km south-west). The town of Retford is located approximately 9.5km south-west. In addition, there are a small number of individual residential properties in close proximity to the Site, including Mill House, approximately 1km west of the rail offloading area and Middle Farm, approximately

1.2km west of the rail offloading area. East of the River Trent the nearest villages are Lea (approximately 2.5km to the east), Knaith (approximately 2.8km to the south-east), Knaith Park (approximately 3.5km to the east) and hamlets of Gate Burton and Marton (approximately 4.1km and 5.1km south-east respectively). The larger town of Gainsborough is approximately 3.5km to the north-east.

- 3.4.2 The nearest international ecological designation is Hatfield Moor Special Area of Conservation (SAC), approximately 19.5km to the north-west of the Site. Lea Marsh Site of Special Scientific Interest (SSSI) is located approximately 1km north-east of the Site, designated for its lowland grassland habitat, with a number of other SSSI located at greater distances. Ten LWS including West Burton LWS, West Burton Reedbed LWS and Burton Round Ditch LWS are located within or adjacent to the Site. Bole Ings LWS and Bole Ings Drains LWS are also in close vicinity to the northern boundary of the Site at Bole.
- 3.4.3 The Site is located on the floodplain of the River Trent, which previous archaeological evidence suggests formed an important cultural boundary. The floodplain may contain palaeo-environmental resources (both organic and mineral deposits), which may provide a valuable record of past climate and land-use. The West Burton scheduled Deserted Medieval Village (DMV) (Scheduled Monument 1017741) is located approximately 75m south of the Site. A Roman road runs adjacent to Segelocum Roman town (SM 1003669) approximately 3.1km south-east of the Site running in a north-west direction to the River Trent.
- 3.4.4 There are clusters of listed buildings (Grade I and Grade II\* Listed) in the nearby villages of Bole, Saundby, North Wheatley, Sturton-le-Steeple, Littleborough, Knaith and Lea. The nearest are in Bole, where the Grade II listed Church of St Martin and the Grade II Bole Manor House and attached outbuilding are located (approximately 1km north-west of the proposed construction laydown area).

**Figure NTS5: Key Environmental Receptors within 2km and 5km of the Order Limits**



3.4.5 Three Conservation Areas are identified within the following settlements within 5km of the Site: Saundby village (approximately 2km north-west); Wheatley (approximately 3.5km west); and Gainsborough (approximately 4.2km north-east).

## 4. The Proposed Development

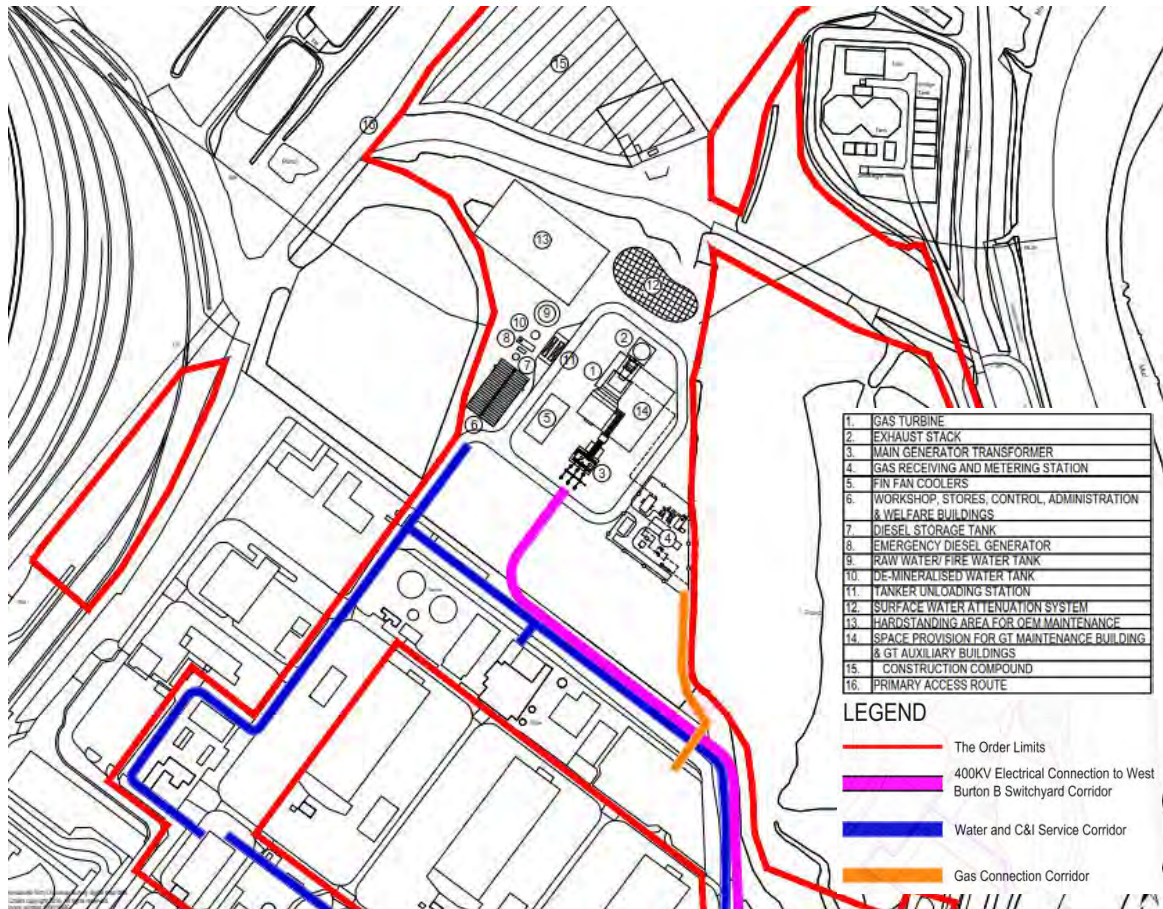
### 4.1 Proposed Development

4.1.1 Peaking plants, such as that proposed, are used to rapidly supply electricity to the network when required by the National Grid. These plants can be fired up at short notice to help cope with periods of high demand or low electricity supply nationally (for example when the wind is not blowing to enable sufficient output to be achieved from the wind farms in the UK), or when required to provide ancillary services to support the National Grid. This is expected to be weighted towards the winter period, usually for a few hours at a time. However, as the operation of the plant is driven by the dynamics of the energy market, the plant could run for longer periods, at any time of day, up to the maximum allowed under its Environmental Permit, which is anticipated to be 2,250 hours per year (1,500 hours per year on a rolling five year average).

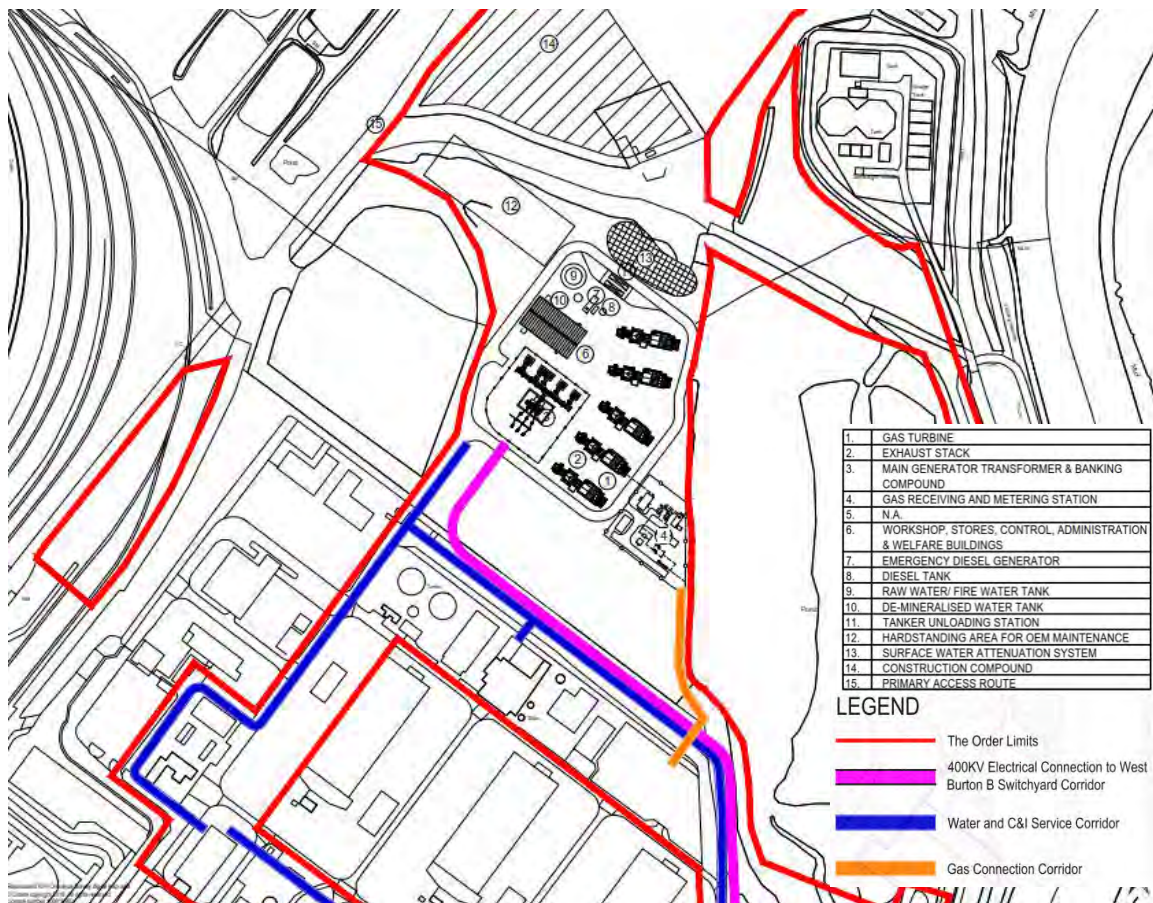
- 4.1.2 Open cycle gas turbines (OCGTs) are one of the gas fired peaking plant technologies available and these have been selected for the Proposed Development. However, at this stage, the final OCGT technology selection cannot yet be made, as it will be determined by various technical and economic considerations. The design of the Proposed Development therefore incorporates a necessary degree of flexibility in the choice of OCGT technology, plant dimensions and the configuration of any enclosures or buildings, to allow for the future selection of the preferred technology and construction contractor.
- 4.1.3 For the purposes of the environmental assessments, up to five gas turbines have been evaluated, with a total of up to 299MW gross electrical output capacity, and the worst-case potential environmental effects of any of the options under consideration are reported in the ES (ES Volume I: Main Report); this may be different for each environmental topic, as explained in each topic chapter.
- 4.1.4 **Figures NTS6** and **NTS7** show indicative layouts for the Proposed Development.
- 4.1.5 Depending on whether a single gas turbine or multiple units are chosen, the turbines and their associated stacks could be located anywhere within the defined Work Area within the Site as at this stage, the stack locations cannot be fixed. Therefore, the air quality, noise and vibration and landscape and visual amenity assessments have been undertaken considering the stacks in different locations within this defined Work Area, with the worst-case impacts reported in the ES (ES Volume I: Main Report).
- 4.1.6 The indicative timescales for the construction and operation of the Proposed Development that have been assumed for the purposes of the assessments are as follows:
- it is currently anticipated that (subject to the necessary consents being granted and an investment decision being made) the earliest date that construction work would commence is around Quarter 3 (Q3) 2020 over a period of up to four years. A more likely construction programme would be within three years from commencement;
  - assuming a three year construction programme, the Proposed Development is unlikely to commence commercial operation before 2023; and
  - it is envisaged that the Proposed Development would have an operational life of up to circa 40 years, therefore decommissioning activities are currently anticipated to commence after 2063.



**Figure NTS6: Indicative site layout – single large gas turbine**



**Figure NTS7: Indicative site layout – up to five smaller turbines**



## 4.2 Components of the Proposed Development

4.2.1 The Proposed Development would comprise a gas fired generating station with electrical output capacity of up to 299MW, together with associated buildings, structures and plant, including:

- up to five OCGT units and generator(s), potentially housed within buildings, with stack(s), transformer(s), air inlet filter(s), exhaust gas diffuser(s) and generators;
- associated switchgear and ancillary equipment;
- auxiliary cooling equipment;
- electrical connections to and from the existing West Burton B switchyard and transformers;
- a gas supply pipeline connecting to the existing WBB gas receiving facility;
- a new surface water drainage system comprising pond(s) and/or a tank or similar, connecting into the existing drainage systems on the West Burton Power Station site;
- water supply and pipeline to the Proposed Development from an existing water supply within the WBB Power Station;

- low voltage electrical, control, metering and other cables and associated switchgear and ancillary equipment to connect the Proposed Development with WBB Power Station;
- associated development including a rail offloading area and a Landscape and Biodiversity Management and Enhancement Area; and
- additional associated development including: vehicle parking and cycle storage facilities; construction laydown areas and contractor facilities; internal access roads, roadways and footpaths; landscaping, fencing and security provisions; noise attenuation features and lighting columns and lighting.

4.2.2 The Proposed Development may also provide a 'black-start' capability to National Grid, to help restart the national electricity transmission system in the event of a total or partial shutdown of the UK transmission system. It is not possible to accurately predict the likely frequency or duration of black-start events. However, historically black-start events have been very infrequent in the UK.

4.2.3 Each part of the Proposed Development is described in further detail in the ES (**Application Document Ref 5.2, Chapter 4: The Proposed Development**).

### 4.3 Design Parameters

4.3.1 The design of the Proposed Development has taken into account the findings of the preliminary and final environmental assessments, consultation with statutory and non-statutory consultees and engagement with contractors and equipment providers.

4.3.2 As outlined above, a number of the design aspects and features of the Proposed Development cannot be confirmed until the tendering process for the design and construction of the generating station has been completed. As such, those features would depend on the contractor selected and their specific configuration and selection of plant. Where design details cannot yet be finalised, a conservative approach has been adopted, whereby the option that gives rise to the worst-case potential environmental impacts have been assessed in the ES (ES Volume I: Main Report).

4.3.3 The ES (**Application Document Ref 5.2, Chapter 4: The Proposed Development** (ES Volume I)) sets out the parameters that have been assessed within the ES for the OCGTs, including maximum building and stack heights given in metres above ordnance datum (mAOD), taking into account the expected maximum predicted ground level of +14.0mAOD. Key parameters are presented in **Table 4-1** and **Table 4-2** below.

**Table 4-1: Main dimensions for single OCGT**

<b>Component</b>	<b>Maximum length (m)</b>	<b>Maximum width (m)</b>	<b>Indicative height (mAGL)</b>	<b>Maximum height (mAOD)</b>	<b>Maximum footprint (m<sup>2</sup>)</b>
Minimum final ground height (mAOD)	+7.1m				
Maximum final ground height (mAOD)	+14.0m				
Single gas turbine, exhaust gas diffuser, generator and air inlet filter (Work No 1a)	50	20	27	41.0	1,000
Gas turbine building (if required) (Work No 1a)	36	12	19	33.0	432
Stack(s) (Work No 1a)	10m diameter		45	59.0	79
Main generator transformer	10	15	8	22.0	150
Auxiliary closed loop cooling equipment (Work No. 1c)	30	15	12	26.0	450
Workshop, stores, control, administration and welfare buildings (Work No.4c)	40	30	10	24.0	1,200
Emergency diesel generator	15	5	6	20.0	75
Diesel storage tank	4m diameter		2	16.0	13

Component	Maximum length (m)	Maximum width (m)	Indicative height (mAGL)	Maximum height (mAOD)	Maximum footprint (m <sup>2</sup> )
Raw water / fire water storage tank (Work No. 4d)	15m diameter		7	21.0	177
Demineralised water storage tank	5m diameter		5	19.0	20
Gas receiving area, gas treatment facilities, compression station and other auxiliary control cabinets and equipment (Work No. 2)	60	45	7	21.0	2700

**Table 4-2: Main dimensions up to five gas turbines**

Component	Maximum length (m)	Maximum width (m)	Indicative height (mAGL)	Maximum height (mAOD)	Maximum footprint (m <sup>2</sup> )
Minimum final ground height (mAOD)	+7.1m				
Maximum final ground height (mAOD)	+14.0m				
Each single gas turbine and generator (Work No. 1a)	35	12	15	29.0	420
Each stack (Work No. 1a)	5m diameter		45	59.0	20
Banking compound area (Work No. 1)	52	48	8	22.0	2,500
Workshop, stores, control,	40	30	10	24.0	1,200

Component	Maximum length (m)	Maximum width (m)	Indicative height (mAGL)	Maximum height (mAOD)	Maximum footprint (m <sup>2</sup> )
administration and welfare buildings (Work No. 4c)					
Emergency diesel generator	15	5	6	20.0	75
Diesel storage tank	4m diameter		2	16.0	13
Raw water / fire water storage tank (Work No. 4d)	15m diameter		7	21.0	177
Demineralised water storage tank	5m diameter		5	19.0	20
Gas receiving area, gas treatment facilities, compression station and other auxiliary control cabinets and equipment (Work No. 2)	60	45	7	21.0	2700

4.3.4 Accompanying indicative layouts and elevations drawings are presented as **Figure 4.1a** and **Figure 4.1b** and **Figure 4.2a** and **Figure 4.2b** (ES Volume III: Figures).

#### 4.4 Proposed Development Operation

4.4.1 The Proposed Development would comply with the Industrial Emissions Directive (IED) so that the impact of emissions to air, soil, surface and groundwater, to the environment and human health would be minimised. The operation of the Proposed Development would be regulated by the Environment Agency through an Environmental Permit. This permit would be used to control normal emissions to the environment from the operation of the Proposed Development and would also consider potential abnormal operation scenarios and prevention or minimisation of accidents through the use of management procedures and process monitoring.

4.4.2 The Proposed Development is anticipated to create up to 15 roles. Some of the roles are expected to be undertaken by existing West Burton/Cottam Power

Station employees. Temporary and contractor employees associated with maintenance activities would also be employed, as required.

#### 4.5 Proposed Development Maintenance

4.5.1 Maintenance would be undertaken, as dictated by the number of running hours or condition/age of the plant. Due to the predicted low annual running hours, it is likely that there would be several years between each significant plant overhaul period.

4.5.2 A range of maintenance activities may be required over the life of the Proposed Development, including replacement of parts or components, restoration of buildings or structures, civils works, upgrades, cleaning and refurbishment. These activities are considered in this ES as part of the operational impacts of the Proposed Development, unless otherwise stated.

#### 4.6 Proposed Development Construction

4.6.1 The Applicant would appoint one or more contractors for the construction of the Proposed Development. The Applicant is committed to ensuring the safe working environment for all employees and contractors.

4.6.2 It is currently anticipated that (subject to the necessary consents being granted and an investment decision being made) the earliest date that construction work would commence is around Q3 2020 over a period of up to four years. A more likely construction programme would be within three years from commencement; and assuming a three year construction programme, the Proposed Development is unlikely to commence commercial operation before 2023.

4.6.3 **Table 4-3** shows an indicative 3 year construction programme.

**Table 4-3: Indicative three year construction programme**

	Year 1				Year 2				Year 3			
	1	2	3	4	1	2	3	4	1	2	3	4
Site Preparation	■	■	■									
Main civil works		■	■	■	■	■	■	■				
Plant installation					■	■	■	■	■	■		
Gas and electrical connections							■	■	■	■		
Commissioning										■	■	■

4.6.4 Core construction working hours would be Monday to Friday 07:00 to 19:00 and Saturday 08:00 to 18:00. However, it is likely that some construction activities may need to be undertaken outside of these core working hours. This is partly because certain construction activities cannot be stopped, such as concrete pouring, if this

is required, but also to manage the construction programme. Where on-site works are needed outside the core hours, they would comply with any restrictions agreed with the local planning authority, in particular regarding control of noise and traffic.

- 4.6.5 A start-up period from 06:30 to 07:00 and a shut-down period from 19:00 to 19:30 Monday to Friday and a start-up period from 07:30 to 08:00 and a shut-down period from 18:00 to 18:30 on a Saturday would also be maintained. These working hours are proposed to be secured by a Requirement of the draft DCO.
- 4.6.6 On average, it is estimated that there would be up to 95 construction personnel on the Site in any one day. The assumed worst-case is that there would be up to circa 200 workers per day contracted to work on the Site at the peak of construction.

## 4.7 Proposed Development Commissioning

- 4.7.1 Commissioning of the Proposed Development would include testing and commissioning of the process equipment in order to ensure that that all systems and components installed are in accordance with the requirements of the Applicant.

## 4.8 Proposed Development Decommissioning

- 4.8.1 The Proposed Development is capable of a life expectancy of circa 40 years, depending on running hours, therefore decommissioning activities are currently anticipated to commence after 2063. Decommissioning would involve the isolation and physical disconnection of feeds and services, including drainage, re-routing of services and control of access to decommissioned areas. If demolition or remediation is proposed, this would be undertaken. An OCGT, whether single turbine or up to five OCGT units would either be removed as a unit for reuse elsewhere (depending on its condition) or alternatively dismantled on-site and removed. Once the plant and equipment have been removed to ground level, it is expected that the hardstanding and sealed concrete areas would be left in place. Any areas of the Proposed Power Plant Site that are below ground level would be backfilled to ground level to leave a levelled area.
- 4.8.2 Decommissioning of the Proposed Development is proposed to be secured by a Requirement of the draft DCO and would be undertaken in accordance with a Decommissioning Environmental Management Plan (DEMP) as approved by the relevant planning authority. Decommissioning is not expected to present any significant environmental impacts beyond those assessed for the Proposed Development construction phase (ES Volume I: Main Report).

## 4.9 Design Evolution and Alternatives

- 4.9.1 The 2009 EIA Regulations state that the ES should include an outline of the main alternatives that have been studied and an indication of the main reasons for decisions made, taking into account the environmental effects. This should include



consideration of 'do nothing'. Under the 2009 EIA Regulations there is no requirement to assess alternatives, only a requirement to provide information regarding those that have been considered. These alternatives are discussed in **Chapter 4: The Proposed Development** (Main Report (ES Volume I)), including consideration of alternative locations within the existing West Burton Power Station site, alternative technologies, alternative design options and design evolutions, and alternative site drainage solutions.

## 5. Planning Policy Context

### 5.1 Legislative Context

- 5.1.1 The Proposed Development falls within the definition of an NSIP under the 2008 Act, as it would generate electricity with an installed capacity of more than 50MW. Before an NSIP can proceed, a DCO must be granted for that project. As such, an Application for development consent has been prepared in accordance with the requirements of the 2008 Act.
- 5.1.2 The Planning Inspectorate is responsible for receiving and examining applications for development consent, upon which they make a recommendation to the Secretary of State for the Department for Business, Energy and Industrial Strategy (BEIS), who then decides whether a DCO should be made.
- 5.1.3 The 2008 Act requires that decisions on NSIP applications be made in accordance with the relevant National Policy Statement (NPS), except to the extent that to do so would:
- lead to the UK being in breach of its international obligations;
  - be in breach of any statutory duty that applies;
  - be unlawful;
  - result in adverse impacts from the development outweighing the benefits; or
  - be contrary to regulations about how decisions are to be taken.
- 5.1.4 Section 104 of the 2008 Act states that the decision maker must also have regard to any local impact reports within the prescribed deadline and any other matters that are considered both important and relevant to their decision. This may include Development Plan documents.
- 5.1.5 The Secretary of State must take into consideration any relevant NPS(s) and must decide applications in accordance with them. Both the potential benefits and adverse impacts should be taken into account.

## 5.2 Policy Context

### National Policy Statements

5.2.1 National policy for NSIPs is set out in a number of NPSs. Two NPSs are relevant to the Proposed Development:

- the Overarching National Policy Statement for Energy (EN-1); and
- the National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2).

5.2.2 Given the level and urgency of need, EN-1 advises the decision maker to ‘start with a presumption in favour of granting consent to applications for energy NSIPs’.

5.2.3 EN-2 outlines factors influencing site selection for fossil fuel power stations, including land use and size of site, transport infrastructure, water resources and grid connection. In outlining such factors, paragraph 2.2.1 states:

*“...it is for energy companies to decide what application to bring forward and the Government does not seek to direct applicants to particular sites for fossil fuel generating stations.”*

### National Planning Policy Framework

5.2.4 The revised National Planning Policy Framework (NPPF) was published in February 2019, replacing earlier versions published in July 2018 and March 2012 and is accompanied by the National Planning Practice Guidance. This framework sets out the Government’s planning policies for England and how these are to be applied. Paragraph 5 of the NPPF makes clear that the document does not contain specific policies for determining applications for NSIPs, as these are to be determined in accordance with the decision making framework set out in the 2008 Act and relevant NPSs, as well as any other matters that are considered ‘relevant’ (which may include the NPPF).

5.2.5 NPPF policies of particular relevance to the EIA include: promoting healthy and safe communities; promoting sustainable transport; achieving well-designed places; meeting the challenge of climate change, flooding and coastal change; and conserving and enhancing the natural and historic environments. The Proposed Development is considered against these policies in the relevant topic specific chapters.

### Local Development Plan Policy

5.2.6 The 2008 Act states that applications for development consent should normally be determined in accordance with the relevant NPS, but also states that it is for the decision maker to have regard to other matters which may be both important and relevant. It is commonly recognised that this can include local planning policies, including local policy designations.

5.2.7 The Proposed Development has been considered against the current local development plan. As the Site lies entirely within the administrative area of Bassetlaw District Council (BDC) and Nottinghamshire County Council (NCC), the following are the most relevant in assessing the Proposed Development:

- Nottinghamshire Local Transport Plan: Strategy 2011-2026;
- Bassetlaw District Council Core Strategy and Development Management Policies Development Plan Document (DPD) (adopted December 2011 and updated July 2012); and
- Sturton Ward Neighbourhood Plan 2015-2030 (adopted December 2015).

5.2.8 BDC is currently in the early stages of preparing a new Local Plan for the District and consulted on a Draft Bassetlaw Local Plan in 2019. In terms of local planning policy, BDC's Local Development Scheme (LDS) indicates that a Local Plan will replace the 2011 Core Strategy and Development Management Policies DPD, but is not expected to be adopted until February 2021. The draft Local Plan makes specific reference to the existing West Burton Power Station in that Paragraph 2.15 states *'Bassetlaw's landscape is dominated by the coal-fired and gas turbine power stations at Cottam and West Burton. The important contribution made by these to Bassetlaw's economy is reflected in the 1000 people employed by the utilities sector.'*

5.2.9 The Sturton Ward Neighbourhood Plan forms part of the Development Plan and is used to assess planning applications submitted within the Parish, within which the Site is located.

5.2.10 Additionally, the Site lies adjacent to the administrative area of Lincolnshire County Council and West Lindsey District Council, where the following documents are relevant for particular topics:

- Central Lincolnshire Local Plan (of relevance to the air quality, noise and vibration and cultural heritage assessments); and
- Derby, Derbyshire, Nottingham and Nottinghamshire (D2N2) Local Enterprise Partnership (LEP) Strategic Economic Plan (of relevance to the socio-economics assessment).

5.2.11 The Application includes a Planning Statement (**Application Document Ref. 7.1**) that provides a full assessment of the Proposed Development in the context of the relevant planning policy as detailed above. The Planning Statement also includes information on the design of the Proposed Development.

## 6. Findings of the EIA

### 6.1 Air Quality

6.1.1 An air quality assessment has been undertaken which considers:

- the present-day and future baseline conditions during construction and at opening;
- the effects of construction of the Proposed Development on air quality for human health and ecosystems, with respect to associated construction traffic, construction plant emissions and construction dust;
- the effects of operational process emissions associated with the Proposed Development on air quality for human health and ecosystems; and
- the potential effects of the eventual decommissioning of the Proposed Development.

6.1.2 The results of the Air Quality Assessment are presented in **Chapter 6: Air Quality** (Main Report (ES Volume I)) and supported by **Appendix 6A: Air Quality** (ES Volume II: Appendices) and **Figures 6.1-6.5** (ES Volume III: Figures).

### Construction

- 6.1.3 The effects of emissions to air from the construction site activities associated with the Proposed Development on the identified receptors are considered to be not significant, based on the implementation of the best practice mitigation measures as included in the Framework Construction Environmental Management Plan (CEMP) (**Application Document Ref. 7.3**) and given the distances to identified sensitive receptors from proposed construction activities.
- 6.1.4 The construction phase Annual Average Daily Traffic (AADT) is predicted to peak at 112 two-way HGV movements per day, accessing the Site via the existing access point, for an estimated maximum of 13 months. The total number of vehicles is predicted to peak at 338 total two-way movements per day on Gainsborough Road. On this basis, more detailed assessment of road traffic air quality impacts associated with the construction phase has not been undertaken, as published guidance indicates that such traffic levels would not be able to generate significant air quality impacts. The effects of emissions to air from the construction traffic associated with the Proposed Development on the identified receptors are, therefore, considered to be not significant.
- 6.1.5 Emissions of dust and particulates from the construction phase of the Proposed Development will be controlled in accordance with industry best practice, through incorporation of appropriate control measures. The management of dust and particulates and application of adequate mitigation measures will be controlled through a proposed CEMP (a Framework CEMP has been prepared upon which the contractor's CEMP would be based - **Application Document Ref. 7.3**). The selected contractor would be encouraged to be a member of the 'Considerate Constructors Scheme', which is an initiative open to all contractors undertaking building work, to assist in reducing potential pollution and nuisance from the Proposed Development.

- 6.1.6 Construction road traffic will be managed in accordance with the Construction Traffic Management Plan (CTMP) to minimise impacts on local receptors. A Framework CTMP is presented in **Application Document Ref. 7.6**.

## Operation

- 6.1.7 The predicted AADT operational traffic is less than 10 vehicles arriving and departing the Site per day. Therefore, traffic associated with the Proposed Development at the time of opening and during its operation has been screened out of the assessment. As such, traffic flows are below the screening criteria for air quality assessment. The effects of emissions to air from operational traffic associated with the Proposed Development on the identified receptors are, therefore considered to be not significant.
- 6.1.8 The operational point source emissions effects on identified receptors (both human and ecological) have been determined through detailed dispersion modelling, based on worst-case assumptions and considering the potential locations for stacks within a defined area of the Site, since the stack locations cannot yet be fixed. Based on emissions to air at IED / European Large Combustion Plant Best Available Techniques (BAT) Reference pollutant emission levels and the stack heights previously outlined, the Proposed Development is predicted to have a negligible adverse effect on air quality at sensitive receptors and therefore the air quality effects are considered to be not significant.
- 6.1.9 If required to help restart the national electricity transmission system, a small (anticipated to be circa 2MW output) diesel generator (hereafter referred to as the emergency diesel generator) would be used to start a small (anticipated to be between 15 and 60MW output) gas turbine (hereafter referred to as the black-start auxiliary power unit). The black-start auxiliary power unit would be used to start a main gas turbine unit at either WBB Power Station or WBC. The emergency diesel generator is expected to run for less than 50 hours per year. The emergency diesel generator would be fired on liquid fuel which is ultra-low sulphur. The emergency diesel generator would have a minimum stack height of 3m above ground level and would be located more than 500m from a Natura 2000 site.
- 6.1.10 The Proposed Development would be designed so that process emissions to air comply with the Emission Limit Values (ELVs) specified in the IED and the Large Combustion Plant BAT Reference document, which was finalised in 2017 and contained lower annual average emission limits than were included in the IED. This would be regulated by the Environment Agency, through the Environmental Permit required for the operation of the Proposed Development.
- 6.1.11 The alternative plant configurations under consideration all meet the IED ELVs without the use of secondary abatement (pollution control) techniques, such as Selective Catalytic Reduction for the control of NO<sub>x</sub> (oxides of nitrogen) emissions. Therefore no secondary abatement is proposed.

- 6.1.12 The stack heights for the Proposed Power Plant have been optimised to minimise ground-level air quality impacts, balanced against the visual impacts of taller stacks.
- 6.1.13 Emissions to air impacts have been assessed based on 35m stack heights (for each of up to five unit stacks) and 40m (for a single gas turbine stack) based on height above finished ground level. These are the stack heights considered to adequately disperse emissions from the Proposed Development assessed options. Stacks of a different height could be utilised depending on the technology selected provided they adequately disperse the emissions which would need to be demonstrated by appropriate dispersion modelling work. Higher stacks could be employed (up to the 45m high stacks that have been assessed in **Chapter 10: Landscape and Visual Amenity** (ES Volume I: Main Report)) which would further reduce predicted ground level pollutant concentrations.
- 6.1.14 The potential for visible plumes from the Proposed Power Plant Site is considered to be low as a result of the water content and temperature of the flue gas emitting from the stacks. There is no steam cycle or wet cooling tower plume associated with the operation of the OCGT units and therefore condensing plumes are not expected to occur.

### Decommissioning

- 6.1.15 The predicted air quality effects of eventual decommissioning of the Proposed Development are considered to be similar to, or less than, those assessed for construction activities and are therefore considered to be not significant.
- 6.1.16 Appropriate best practice mitigation measures would be applied during decommissioning works and documented in the DEMP. No additional mitigation for decommissioning of the Proposed Development beyond such best practice is considered to be required at this stage.

## 6.2 Traffic and Transport

- 6.2.1 A traffic and transport assessment has been undertaken which considers:
- the present-day and future baseline conditions during construction and at opening;
  - the effects of construction traffic on the local road network as a result of the Proposed Development;
  - the effects of operational traffic on the local road network as a result of the Proposed Development; and
  - the potential effects of the eventual decommissioning of the Proposed Development.
- 6.2.2 The assessment has considered the potential impacts of traffic on severance, driver delay, pedestrian amenity and delay, accidents and safety. The results are

presented in **Chapter 7: Traffic and Transport** (ES Volume I: Main Report) and supported by **Appendix 7A: Transport Assessment** (ES Volume I: Appendices), the Construction Workers Traffic Plan (CWTP) (**Application Document Ref. 7.7**) and the Construction Traffic Management Plan (CTMP) (**Application Document Ref. 7.6**).

- 6.2.3 The West Burton Power Station site lies close to the junction of the A631 and A620. These two routes provide direct links to the A1 and the areas to the west of the A1. The A631 Gainsborough river crossing provides a link with areas to the east of the River Trent. The West Burton Power Station site is accessed from a C-class road, the C2 (Gainsborough Road), which joins the A620 at Bole Corner.
- 6.2.4 The study area for the traffic and transport assessment has focused on the road links that have the greatest potential to be impacted. Existing traffic flows on these existing links have been reviewed. A series of 7-day automatic traffic counts (ATCs) and junction assessments were undertaken in June 2017 to provide a baseline for comparison of the roads and affected junctions. These counts are considered to be representative for the Application as they are less than three years old and conform with published guidance.
- 6.2.5 As baseline traffic flows on the road network are projected to increase year on year and a number of other 'committed' developments are likely to also influence future traffic levels, adjustments to forecasts have been made to provide a robust future baseline. Data has then been compared to predicted traffic flows during the Proposed Development construction, operation and decommissioning.

### Construction

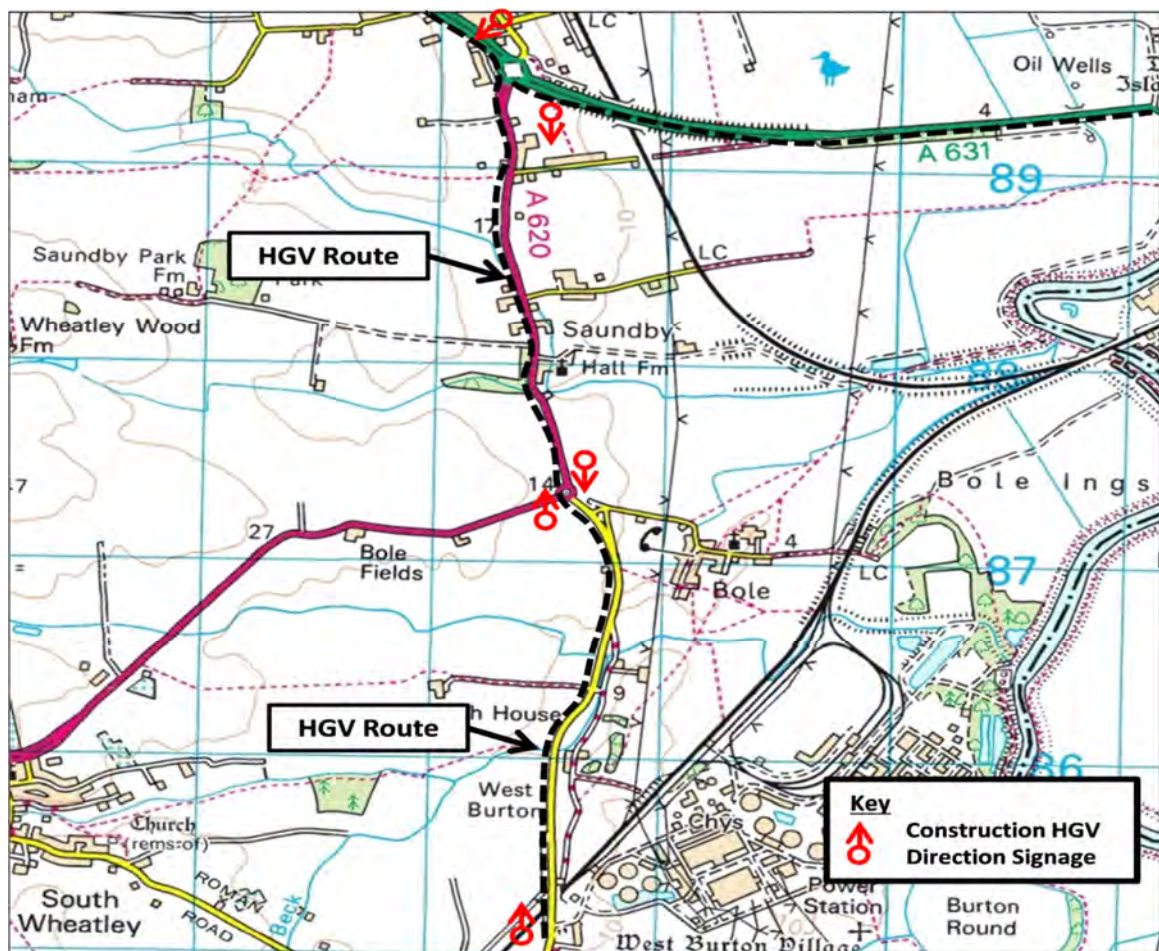
- 6.2.6 The assumed worst-case is that the construction workforce would peak at circa 200 workers per day. Such a workforce is likely to generate approximately 113 vehicular trips (one-way) during the morning arrival and evening departure periods at the peak of construction. The core construction working hours for the Proposed Development would be 07:00 to 19:00 Monday to Friday (except bank holidays) and 08:00 to 18:00 on Saturday. The volume of HGVs associated with construction of the Proposed Development on the network would be at its maximum of 112 two-way daily vehicle movements (56 in and 56 out) at the peak of construction. Deliveries would be made within the core construction hours, unless agreed with the local planning authority on a case by case basis.
- 6.2.7 Taking into account the predicted traffic flows, the effects of Proposed Development construction traffic on all road links and junctions within the study area with respect to severance, pedestrian amenity, fear and intimidation, highway safety and driver delay are considered to be negligible, and therefore not significant.
- 6.2.8 Traffic movements would be controlled during the Proposed Development construction phase in order to minimise potential impacts on the surrounding road network – in particular construction HGVs arriving or departing the West Burton

Power Station site would travel to/from the north via the A620 and onwards to the A631, avoiding the village of Sturton-le-Steeple as shown on **Figure NTS8**. Signage is already in place at the West Burton Power Station site entrance directing HGVs north towards the A620.

6.2.9 The control of traffic movements and a range of good practice mitigation measures would be implemented during the construction phase to minimise traffic impacts upon local highways. This includes implementation of a CWTP, proposed to be secured by a Requirement of the draft DCO (a Framework CWTP is provided in **Application Document Ref 7.7**) requiring the contractor to prepare a CTMP, specifying a number of measures to control the routing and impact that HGVs would have on the local road network (a Framework CTMP is provided in **Application Document Ref 7.6**). The CTMP would include an HGV and Abnormal Indivisible Loads (AILs) routing plan which HGV drivers would be required to adhere to.

6.2.10 Signage is currently in place at the exit to the main West Burton Power Station site, directing all HGVs to the A620.

**Figure NTS8: HGV designated route plan (construction phase)**





## Operation

- 6.2.11 Once the Proposed Development is operational, up to 15 permanent operational roles would be created of which some are expected to be undertaken by existing West Burton/Cottam Power Station employees. Conservatively assuming car occupancy of one, this could equate to an additional 15 cars accessing the West Burton Power Station site per day (30 vehicle movements). There would also be around four additional HGV deliveries per day associated with the operations and maintenance of plant/equipment.
- 6.2.12 Due to the very low traffic flows which would result once the Proposed Development is operational, the vehicle numbers generated would be considerably lower than those during the construction period. The overall traffic effects during Proposed Development operation are, therefore, considered to be negligible (not significant).

## Decommissioning

- 6.2.13 Decommissioning would be expected to require some traffic movements associated with the removal (and recycling, as appropriate) of material arising from demolition and potentially the import of materials for land restoration and reinstatement. However, vehicle numbers are not expected to be higher than those experienced during the Proposed Development construction period. Traffic effects are, therefore, anticipated to be not significant. To minimise the impacts of decommissioning upon local highways, it is anticipated that a Decommissioning Traffic Management Plan (DTMP) would be prepared and agreed with the local planning authority to control the routing and impact of HGVs.

## 6.3 Noise & Vibration

- 6.3.1 An assessment has been undertaken to consider the potential effects of noise and vibration resulting from the Proposed Development on local residential Noise Sensitive Receptors (NSR), set out in **Table 8-5** of **Chapter 8: Noise and Vibration** (ES Volume I). Impacts during the construction, operation and decommissioning phases of the Proposed Development have been assessed. In particular, the assessment considers potential impacts on identified NSR in terms of:
- the present-day and future baseline conditions during construction and at opening;
  - the effects of construction of the Proposed Development on NSR during the site clearance and construction works and predicted changes in road traffic noise levels on the local road network;
  - effects of noise and vibration resulting from operation of the Proposed Development; and
  - the potential effects of the eventual decommissioning of the Proposed Development.

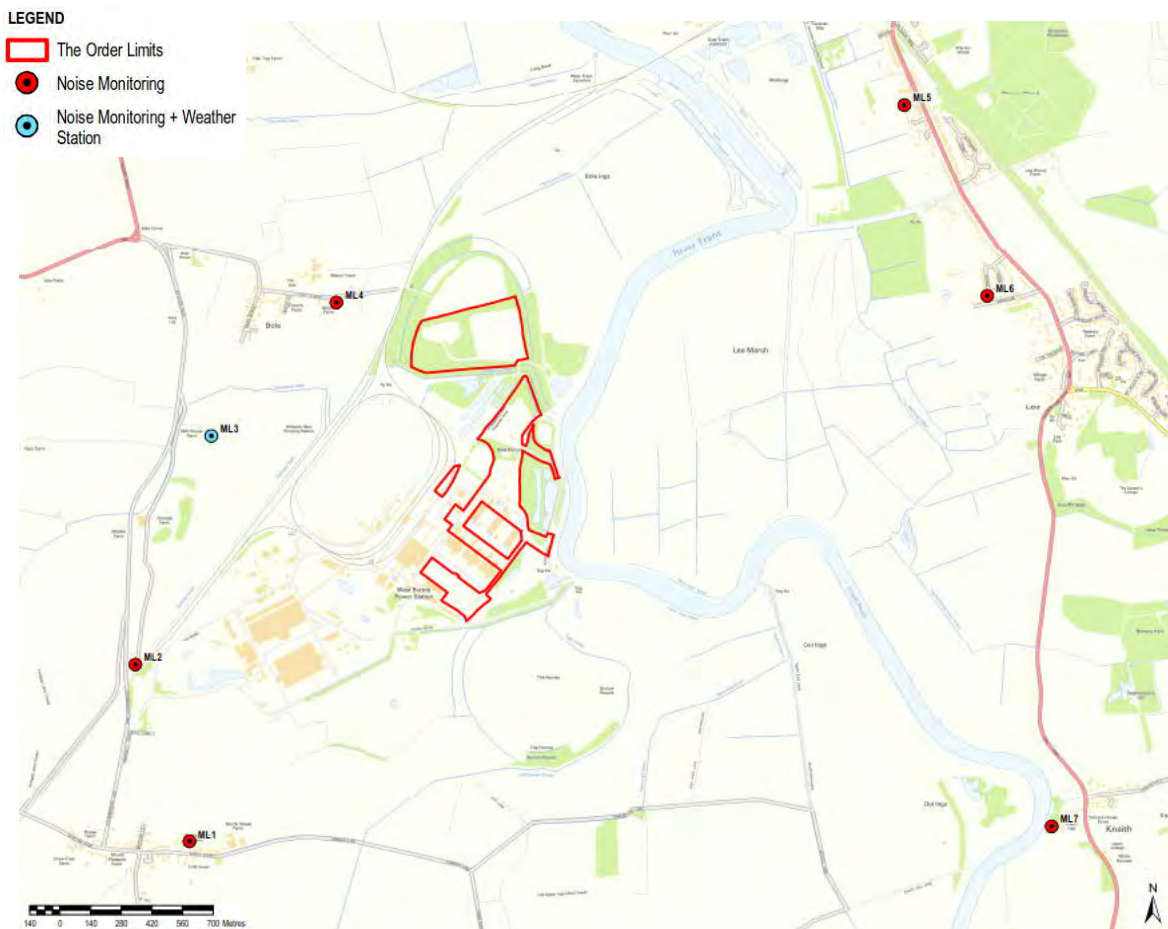
6.3.2 The results of the Noise and Vibration Assessment are presented in **Chapter 8: Noise and Vibration (ES Volume I)**. To establish a representative baseline, noise monitoring was undertaken at the NSR illustrated on **Figure NTS9**.

### Construction

6.3.3 Construction noise effects at all receptors during construction of the Proposed Development are predicted to be negligible (not significant) during the daytime period, due largely to the distances between the construction works and NSR.

6.3.4 Construction activities taking place outside core working hours would need to be planned, managed and mitigated appropriately so as not to exceed agreed noise threshold values at the sensitive receptors. Provided the threshold values are not exceeded, construction activities outside of core working hours can be considered as having a minor adverse effect or less (not significant) at NSR. The scheme put in place to control activities would be agreed with BDC and is proposed to be secured through a Requirement of the draft DCO.

**Figure NTS9: Noise and weather monitoring locations**



6.3.5 Either no change or a very low magnitude of noise impact is expected due to changes in traffic flows along all the assessed routes during the construction phase. This would result in no change or negligible adverse effects (not significant) at local residential NSR.

- 6.3.6 There are no residential receptors in close proximity to the Proposed Development which have the potential to be affected by construction vibration. However, there is the potential for some vibration impacts upon buildings/structures within the West Burton Power Station site. Whilst it is considered unlikely that most typical construction working routines would generate levels of vibration above which building damage would be expected, there is the potential that vibration impacts from some construction activities such as piling could cause annoyance to occupants, if uncontrolled. The need for piling, and the type of piling to be used if required, is not yet confirmed.
- 6.3.7 If piling, heavy earthworks, vibratory rollers or other significant vibration producing operations are proposed in close proximity to any existing power station buildings, further consideration would be given to potential impacts, once the contractor is appointed and the construction methods are developed. As the construction of the Proposed Development and the use of many of the existing buildings within the West Burton Power Station site are within the control of the Applicant, any identified issues can be effectively managed by the Applicant and their contractor.
- 6.3.8 Construction activities are likely to be undertaken during 07:00 and 19:00 hours on Monday to Friday and 08:00 and 18:00 hours on a Saturday, although some works may take place outside of core working hours if agreed with BDC. Measures to mitigate noise would be implemented during the construction phase in order to minimise impacts at local residential NSR, particularly for any activities required outside of core working hours.
- 6.3.9 A CEMP would be produced that would provide details of proposed environmental control measures, including those related to noise, taking into account the mitigation measures included in the Framework CEMP (**Application Document Ref. 7.3**).
- 6.3.10 Measures to control construction management, traffic management and overall site management would be prepared as part of the final CEMP, CTMP and CWMP to help minimise impacts of construction works. One of the key aims of the final CEMP would be to minimise noise disruption to local residents during the construction period.
- 6.3.11 Consultation and communication with the local community throughout the construction period would also help to publicise the works schedule, giving notification to residents of periods when higher levels of noise may occur and providing lines of communication so that any complaints can be addressed.
- 6.3.12 A detailed noise assessment would be carried out once the contractor is appointed and further details of construction methods are known, in order to identify specific mitigation measures for the Proposed Development (including construction traffic). The control of noise, including monitoring during construction is proposed to be secured by a Requirement of the draft DCO.

## Operation

- 6.3.13 The preferred configuration of the Proposed Development is yet to be decided. Therefore, noise modelling has been undertaken for several different potential operational scenarios and plant configurations in order to determine the worst-case sound levels that could be produced by various unmitigated and mitigated options for the purposes of determining a representative worst-case.
- 6.3.14 Predicted noise levels for the worst-case unmitigated scenario (up to five smaller OCGTs) produce a range of impact magnitudes – from low to high adverse - at selected NSR. This would result in effects between minor (not significant) to major adverse (significant).
- 6.3.15 Based on these worst-case unmitigated results, further engineering appraisal was undertaken to identify potential design and embedded mitigation options that, in combination, would reduce predicted sound levels.
- 6.3.16 The use of a combination of such mitigation measures would achieve a reduction in sound levels so that the daytime and night-time criterion (rating level no greater than +5dB above the defined representative background sound level) at each NSR can be achieved. This would result in a very low magnitude of impact and a negligible adverse effect at each of the NSR which would not be significant. Control of operational noise is proposed to be secured by a Requirement of the draft DCO and also through the Environmental Permit, with the levels and the approach to monitoring of noise effects to be agreed with BDC in consultation with WLDC.
- 6.3.17 As the design progresses to the detailed design stage, the existing noise model would be refined and additional acoustic assessment would be undertaken in consultation with the designers, to determine the most appropriate mitigation options. The findings of the further assessment would inform the design to ensure the target of no greater than +5dB above the representative background sound level at each NSR is achieved.
- 6.3.18 The selection of the Proposed Power Plant Site and development of the indicative concept layout have included consideration of potential noise effects and proximity to NSR, with plant being located close to the WBB Power Station, in order to increase the distance from NSR. Noise modelling has shown that design options are available to enable noise impacts at NSR to be not significant and several options for configuration of plant and equipment and suppliers of the generation equipment have been considered. However, during the detailed design stage, options to further reduce potential noise effects through design would be further explored.
- 6.3.19 The Proposed Development would be operated in accordance with an Environmental Permit issued and regulated by the Environment Agency. This would require operational noise from the generating station to be controlled

through the use of BAT, which would be determined through the Environmental Permit application.

## Decommissioning

6.3.20 Potential noise effects would require further consideration at the decommissioning stage of the Proposed Development. However, appropriate measures to mitigate noise would be put in place during the works (similar to those that would be adopted during the construction phase) (to be included in the DEMP). The predicted noise and vibration effects of eventual decommissioning of the Proposed Development are considered to be comparable to – or less than – those assessed for construction activities, and thus effects are not anticipated to be significant.

## 6.4 Ecology

6.4.1 An assessment has been undertaken to consider the potential effects resulting from the Proposed Development on ecology and nature conservation. Impacts during the construction, operation and decommissioning phases of the Proposed Development have been assessed. 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.

6.4.2 The results of the Ecology and Nature Conservation Assessment are presented in **Chapter 9: Ecology** (ES Volume I: Main Report) and supported by **Appendices 9A – 9I** (ES Volume II: Appendices) which document the findings of the desk study and field surveys undertaken; **Figure 9.1** (ES Volume III: Figures); the Habitats Regulations Assessment No Significant Effects Report (NSER) (**Application Document Ref. 4.3**); and the Landscape and Biodiversity Management and Enhancement Plan (**Application Document Ref. 7.5**).

## Construction

6.4.3 The following broad categories of impact were used for the purposes of the construction phase ecological impact assessment:

- 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.

- 6.4.4 Although killing/injury of individual newts within the vicinity of breeding ponds would be avoided with the implementation of development design and impact avoidance measures, 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. No significant adverse or beneficial effects are predicted on any other ecological feature during the construction phase of the Proposed Development.
- 6.4.5 The design process for the Proposed Development has considered ecological constraints from the outset and has incorporated, where possible, measures to reduce the potential for adverse ecological effects. The measures identified and adopted include those that are part of 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.
- 6.4.6 These measures include use of a CEMP to manage construction impacts, avoiding high quality habitats where reasonably practicable, and measures taken prior to and during construction to avoid the killing/injury of great crested newts (under a European Protected Species Mitigation (EPSM) licence), reptiles and nesting birds in terrestrial habitats.
- 6.4.7 A suitably licensed 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.

## Operation

- 6.4.8 During the Proposed Development operational phase, potential effects on ecological features could result from the following:
- 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.
- 6.4.9 To reduce adverse impacts and effects on ecology, where reasonably practicable, the following development design and impact avoidance measures would be adopted during the operation phase:

- lighting impacts on sensitive ecological features (e.g. West Burton Power Station LWS) would be minimised as far as reasonably practicable, for example by directing lighting away from adjacent habitats in accordance with The Lighting Strategy (Application Document Ref. No. 7.4); and
- air impacts on designated sites would be minimised through the use of appropriate stack heights to aid dispersion of pollutants and emissions monitoring to demonstrate continued compliance with emission limit values set by the Environment Agency in the Environmental Permit.

6.4.10 In addition to the design and impact avoidance measures as detailed above, the Proposed Development includes proposals for ecological mitigation and enhancement of habitats at the Site which aim to deliver no net loss (and a small net gain) of biodiversity, and to restore and enhance habitat for great crested newts to compensate for the temporary and permanent loss of habitat to the Proposed Development. Such measures are illustrated on **Figure NTS10** and include:

- management and improvement of existing habitats in the north of the Site to maintain and diversify mosaics of scrub, grassland and reedbed habitat;
- management of existing areas of scrub to the north of Wheatley Beck to improve their wildlife value, including planting of groups of native trees of local provenance 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 with the aim of enhancing its ecological value by increasing the proportion and diversity of wildflowers;
- re-location of the artificial hibernacula dismantled within the Proposed Power Plant Site to areas of retained habitat to the north of the Site. Additional habitat piles and hibernacula would be constructed in these areas using arisings (logs, turf) generated during Site clearance to provide additional opportunities for refuge and hibernation for newts and other species; and
- all habitats that would be 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 would be planted to provide benefits for biodiversity.

6.4.11 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**). Monitoring during operation to ensure the successful establishment and management of habitats restored or enhanced during/after construction is described in the Landscaping and Biodiversity Management and Enhancement Plan (**Application Document Ref. No. 7.5**).

6.4.12 Following the implementation of the design and impact avoidance measures set out in the ES, together with the proposed mitigation and enhancement proposals, it is predicted that the Proposed Development would not have any significant ecological effects and the residual effect of the Proposed Development on great crested newt populations at the Site would be reduced to neutral (not significant).

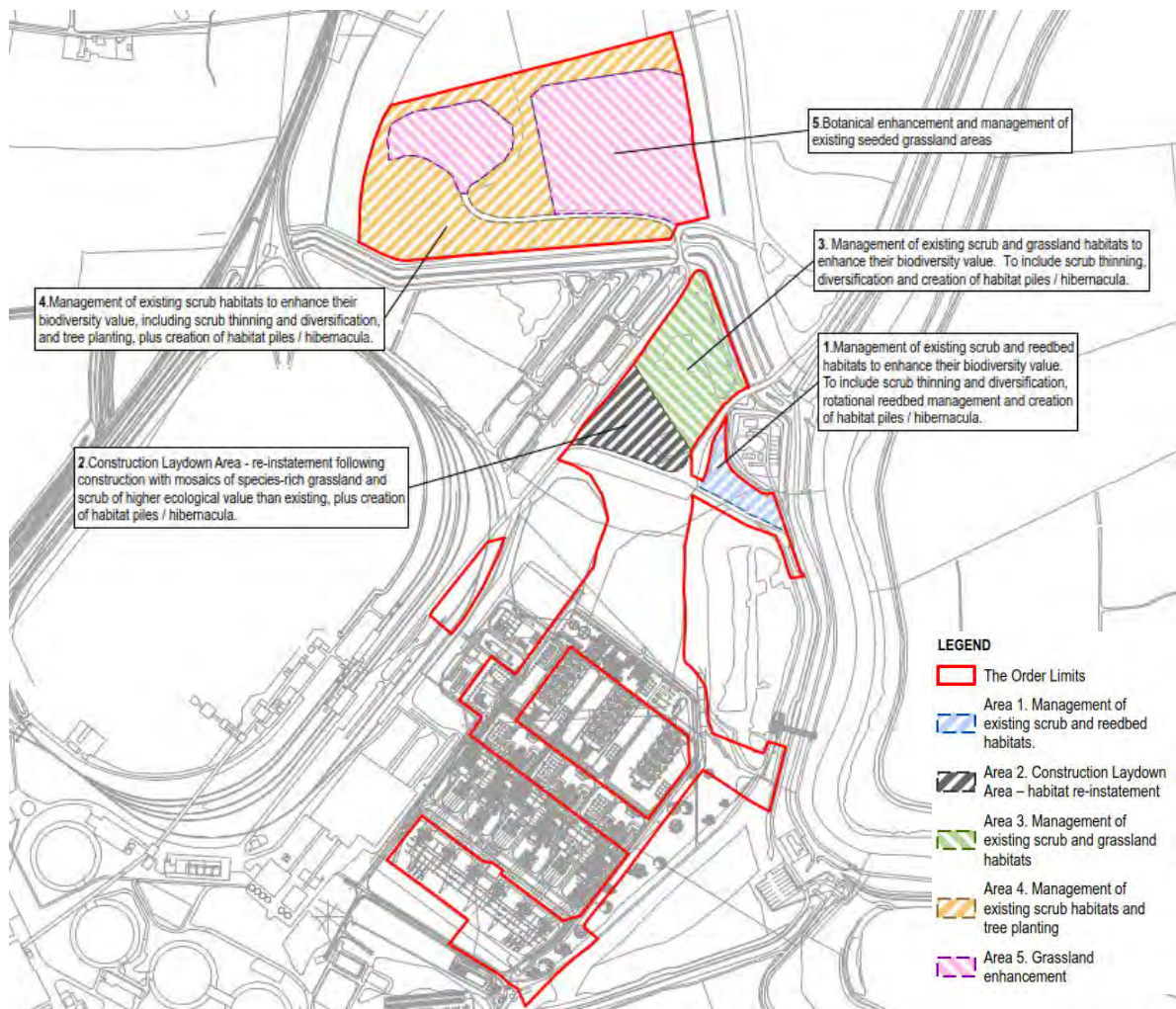
### Decommissioning

6.4.13 Impact sources associated with the decommissioning period of the Proposed Development are likely to be of a similar nature to those associated with the construction period. The extent of habitat loss that would likely be required during decommissioning would be much less than at construction, and the resulting effects on ecological features are therefore likely to be lower.

6.4.14 Further ecological surveys would be undertaken in advance of the decommissioning works to determine the status of protected species and to evaluate the habitats present that may be impacted. Relevant avoidance and mitigation measures would be specified and implemented with reference to the findings of such surveys.



**Figure NTS10: landscaping and biodiversity management and enhancement areas**



## 6.5 Landscape and Visual Amenity

6.5.1 An assessment has been undertaken which considers the potential effects of the Proposed Development on landscape character (as a resource in its own right) and visual amenity. The assessment considers the present-day and future baseline conditions and the potential effects during Proposed Development construction, operation and eventual decommissioning.

6.5.2 The results of the Landscape and Visual Amenity Assessment are presented in **Chapter 10: Landscape and Visual Amenity** (ES Volume I: Main Report) supported by **Appendix 10A** (ES Volume II: Appendices); **Figures 10.1 - 10.40** (including viewpoint locations and photomontages) (ES Volume III: Figures); and the Landscape and Biodiversity Management and Enhancement Plan (**Application Document Ref. 7.5**).

## Landscape

- 6.5.3 Construction activities undertaken as part of the Proposed Development would introduce mobile plant which may include piling rigs, heavy plant machinery and cranes. Construction activities would result in the temporary loss of an area of grassland within the Site, which would be used as the construction laydown area. If required, works to construct the southern drainage connection corridor (if chosen) and to a lesser extent, the other two drainage options under consideration are likely to require removal of a small amount of existing vegetation within areas of scrub near the approach to the River Trent. No other on-site or off-site landscape features would be impacted as a result of construction activities.
- 6.5.4 The Proposed Development would result in increased built form and structures within the existing West Burton Power Station site. The Proposed Development is assessed as likely to result in a low or very low impact on landscape character during both construction and operation. This is because the additional built form being introduced is similar in form, but smaller in scale, than that already within the West Burton Power Station site. These effects are assessed to be minor or negligible adverse and not significant.
- 6.5.5 Existing vegetation around the Site provides screening for low level operations and structures within the study area. The mitigation of landscape effects is a vital part of the Proposed Development design which seeks to retain and maintain existing well-established vegetation within the Site as far as practicable.
- 6.5.6 A number of impact avoidance measures would either be incorporated into the design or are standard construction or operational measures so as to minimise visual impacts of the Proposed Development.

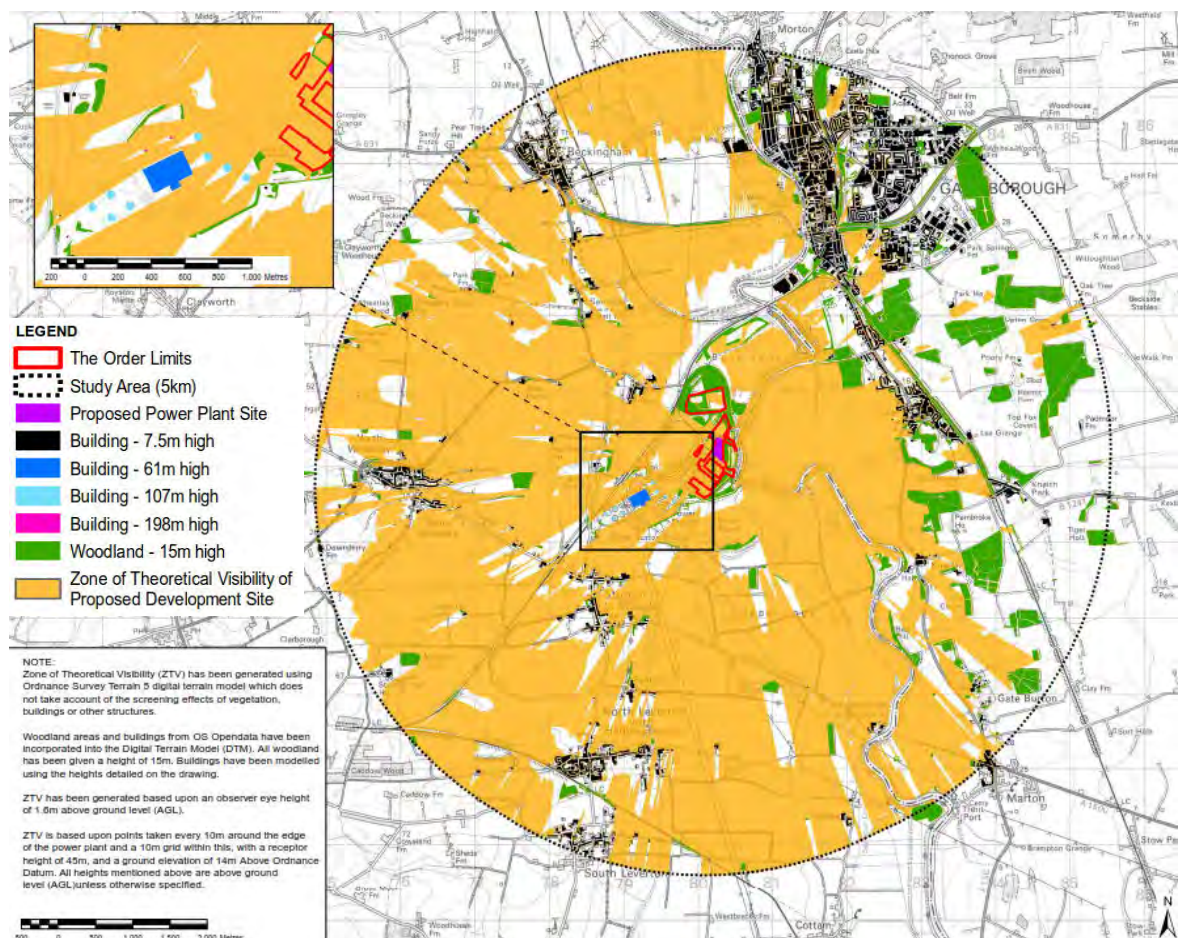
## Visual Amenity

- 6.5.7 Changes in views may give rise to adverse or beneficial visual effects, through obstruction in views, alteration of the parts of the view and the opening up of new views by removal of screening. Potential visual effects arising from the construction activities include:
- the introduction of stationary and moving construction machinery;
  - the introduction of low level construction operations, including heavy plant movements, welfare facilities, laydown and storage areas;
  - construction vehicles entering and leaving the Site;
  - the progressive construction of tall structures; and
  - construction lighting.
- 6.5.8 The visual impact of the Proposed Development considers the existing large scale structures within the West Burton Power Station site. These are visually prominent within the study area. Views towards the West Burton Power Station

site from settlements within the study area are generally restricted to locations along settlement edges, due to the screening effect of built form and/or boundary vegetation. Views from PRow within the countryside tend to be open and expansive with low level views of the West Burton Power Station site screened by vegetation within the intervening countryside and along the boundaries of the Site.

6.5.9 The potential visual effects due to the Proposed Development components were evaluated at 15 selected viewpoints located within the Zone of Theoretical Visibility (ZTV) (**Figure NTS11**) which take into account proposed future ground levels and the maximum development parameters e.g. five stacks of up to 45m high for the Proposed Development.

**Figure NTS11: Zone of Theoretical Visibility**



6.5.10 It has been assessed that the majority of visual receptors would experience a small magnitude of impact during construction and operation of the Proposed Development, resulting in a minor adverse effect that is not significant. However, receptors at Viewpoint 4 (users of PRow Bole FP3B/Bole FP4/residents at Bole) would experience a medium magnitude of impact due to the introduction of built structures against the skyline, making them more prominent and extending the amount of the view which includes large scale development. This would result in a moderate adverse effect on receptors at this location during both construction and operation that is considered to be significant.

- 6.5.11 Due to the height of structures comprising the Proposed Development and the location of this viewpoint, it is considered that addition of landscape features within the Site would not be effective in reducing the significance of visual effects resulting from the Proposed Development at this viewpoint. Tree planting proposed as part of the Landscape and Biodiversity Strategy (**Application Document Ref. 7.5**) would therefore not reduce visual effects at this location, but is proposed in part to reduce visual impacts for receptors located nearby.
- 6.5.12 An integrated design approach that considers massing and the nature of taller structures within the Site to minimise potential ‘wall’ effects would reduce visual impacts of the Proposed Development. The final finishes of the buildings and exact sizes of component parts would not be finalised until the final detailed design is complete and is proposed to be secured through a Requirement of the draft DCO. Photomontages illustrating the existing baseline and representations of the single large OCGT and up to five smaller OCGT options are illustrated on **Figures NTS12a, NTS12b** and **NTS12c** below.

**Figure NTS12a: Viewpoint 4 photomontage (summer) – existing view**



**Figure NTS12b: Viewpoint 4 photomontage (summer) – proposed single large turbine**



### Figure NTS12c: Viewpoint 4 photomontage (summer) – up to five smaller gas turbines



6.5.13 The effects of lighting at night-time have been assessed, taking into account the Lighting Strategy (**Application Document Ref. 7.4**). Due to the screening effect of existing vegetation and the restrictions placed on lighting by the Lighting Strategy, it is expected that lighting effects resulting from the Proposed Development would not significantly increase above current baseline levels from WBA and WBB Power Stations.

6.5.14 The landscape and visual effects during decommissioning would be similar to those described during construction. Once the decommissioning process has been completed, it is anticipated that the resulting conditions would be similar to those currently existing at the Site.

## 6.6 Ground Conditions and Hydrogeology

6.6.1 An assessment has been undertaken which considers the potential effects of the Proposed Development on geology, geo-environmental ground conditions and groundwater. The assessment describes:

- the existing and future geological and hydrogeological conditions at the Site;
- the likely nature and existing sources of contamination which may be present at the Site;
- the construction and operational effects of the Proposed Development on geology, geo-environmental ground conditions and groundwater; and
- the potential effects of the eventual decommissioning of the Proposed Development.

6.6.2 The results of the Ground Conditions and Hydrogeology Assessment are presented in **Chapter 11: Ground Conditions and Hydrogeology** (ES Volume I: Main Report) which documents the findings of the desk study and field surveys undertaken and supported by **Appendix 11A: Phase I Geo-Environmental Site Assessment** and **Appendix 11B: West Burton C Ground Investigation Environmental Support and Sampling** (ES Volume II: Appendices).

## Construction

6.6.3 Potential impacts associated with ground conditions during the Proposed Development construction phase include:

- the discovery of soils showing evidence of contamination during groundworks;
- potential disturbance of soil contamination;
- discovery of impacted groundwater/surface water recovered during dewatering which may not be suitable for discharge without treatment;
- foundation methods and construction activities that may open and/or modify potential pollutant linkages;
- re-profiling of the Site including the possible introduction of new fill materials and the removal of unsuitable or excessive materials;
- runoff from contaminated material exposed and/or stockpiled during site construction works;
- contamination arising from spillages associated with vehicles and construction materials;
- airborne contamination arising from potentially contaminated dust; removal of any waste materials and/or contaminated soil; and
- introduction of contaminated materials during infilling activities.

6.6.4 A range of impact avoidance measures would be incorporated into the Proposed Development design or are standard demolition, construction and operational practices. These measures would be secured through the CEMP.

6.6.5 During the construction phase, given the historical land use within the West Burton Power Station site, there is a potential for contamination to be encountered locally within excavations. As such, the CEMP would include measures to protect land quality. This includes measures to protect construction workers, ensuring that all material is suitable for its proposed use, measures to prevent leakages of oils and fuels from plant and machinery; implementation of an emergency spillage action plan, and pollution control measures to deal with any land contamination encountered during the construction works. In addition, foundations and services would be designed and constructed to prevent the creation of pathways for the migration of contaminants and be constructed of materials that are suitable for the ground conditions and designed use. Piling design, if required, and construction works would be completed following preparation of a piling risk assessment, completed in accordance with Environment Agency guidance.

6.6.6 A site-specific (Phase 2) intrusive ground investigation has been undertaken to provide an initial assessment of ground conditions beneath the Proposed Development. The results of the chemical analysis of soils and groundwater collected during the site investigation were screened against Generic Assessment Criteria (GAC) which represent a level of minimal risk, below which it can be

presumed that there is no risk to receptors. Results indicated that levels of contamination detected at the Site do not currently present a risk to human health and controlled waters at the Site. The need for any additional mitigation measures (additional to those detailed above) would be developed in consultation with the Environment Agency and other relevant consultees prior to commencement of the Proposed Development.

- 6.6.7 The assessment indicates that with the implementation of the defined impact avoidance measures and best practice guidance, construction effects related to potential geological, hydrogeological and contamination related impacts associated with the Proposed Development are predicted to be negligible or minor adverse, and therefore not significant.

### Operation

- 6.6.8 Potential impacts associated with ground conditions during the operational phase are anticipated to include: leaks, spills and contamination from storage of chemicals, fuels and wastes on-site affecting site users and groundwater; and presence of gases, vapours and groundwater in the ground affecting site users and buildings. These potential risks would be managed by the Environment Agency through the Environmental Permit.
- 6.6.9 During the operational period, liquid fuel storage areas and transformer building areas would be appropriately bunded to ensure that, in the event of any spillage, the materials would be safely contained. In addition, the Outline Drainage Strategy (**Application Document Ref 7.8**) includes a range of measures to protect land quality. With the implementation of such measures, and with good housekeeping and management practices secured through compliance with the Environmental Permit, impacts to soil and groundwater can be avoided.
- 6.6.10 The assessment indicates that with the implementation of the defined impact avoidance measures and best practice guidance, operational effects related to potential geological, hydrogeological and contamination related impacts associated with the Proposed Development are predicted to be negligible or minor adverse, and therefore not significant.

### Decommissioning

- 6.6.11 Potential impacts during the decommissioning phase are anticipated to include:
- generation of wastes, crushed concrete and other demolition materials;
  - discovery of soil contamination;
  - activities that may open and/or modify potential pollutant linkages;
  - site re-profiling;
  - runoff from contaminated material exposed and/or stockpiled;
  - spillages associated with vehicles and demolition materials;

- airborne contamination arising from potentially contaminated dust;
- removal of any waste materials and/or contaminated soil; and
- introduction of contaminated materials during infilling activities.

6.6.12 These potential risks would be managed through the DEMP.

6.6.13 The Proposed Development would be subject to decommissioning under the Environmental Permit, including conditions relating to chemical/polluting material handling, storage and use and emergency procedures in line with BAT. A detailed DEMP would be prepared to identify required measures to prevent contamination during this phase of the Proposed Development, based on the detailed decommissioning plan.

6.6.14 The assessment indicates that with the implementation of the defined impact avoidance measures and best practice guidance, decommissioning effects related to potential geological, hydrogeological and contamination related impacts associated with the Proposed Development are predicted to be negligible or minor adverse, and therefore not significant.

## 6.7 Flood Risk, Hydrology and Water Resources

6.7.1 An assessment has been undertaken which considers the potential effects of the Proposed Development on Flood Risk, Hydrology and Water Resources.

6.7.2 The results of the Flood Risk, Hydrology and Water Resources Assessment are presented in **Chapter 12: Flood Risk, Hydrology and Water Resources** (ES Volume I: Main Report) and supported by **Appendix 12A: Flood Risk Assessment** (ES Volume II: Appendices) and the Outline Drainage Strategy (**Application Document Ref. 7.8**).

6.7.3 The main watercourses in the vicinity of the Site include the River Trent, Wheatley Beck and Catchwater Drain. The assessment considers watercourses within an area from immediately upstream of the Site, to as far downstream as a potential impact could influence the quality or quantity of the watercourse. The study area for consideration of potential impacts on groundwater is larger than the surface water study area, in order to consider potential impacts on the aquifer. Of these waterbodies, the River Trent is considered to be the most sensitive, being defined as having very high importance with respect to water quality and high importance in relation to water supply, based upon its status under the Water Framework Directive (WFD).

### Construction

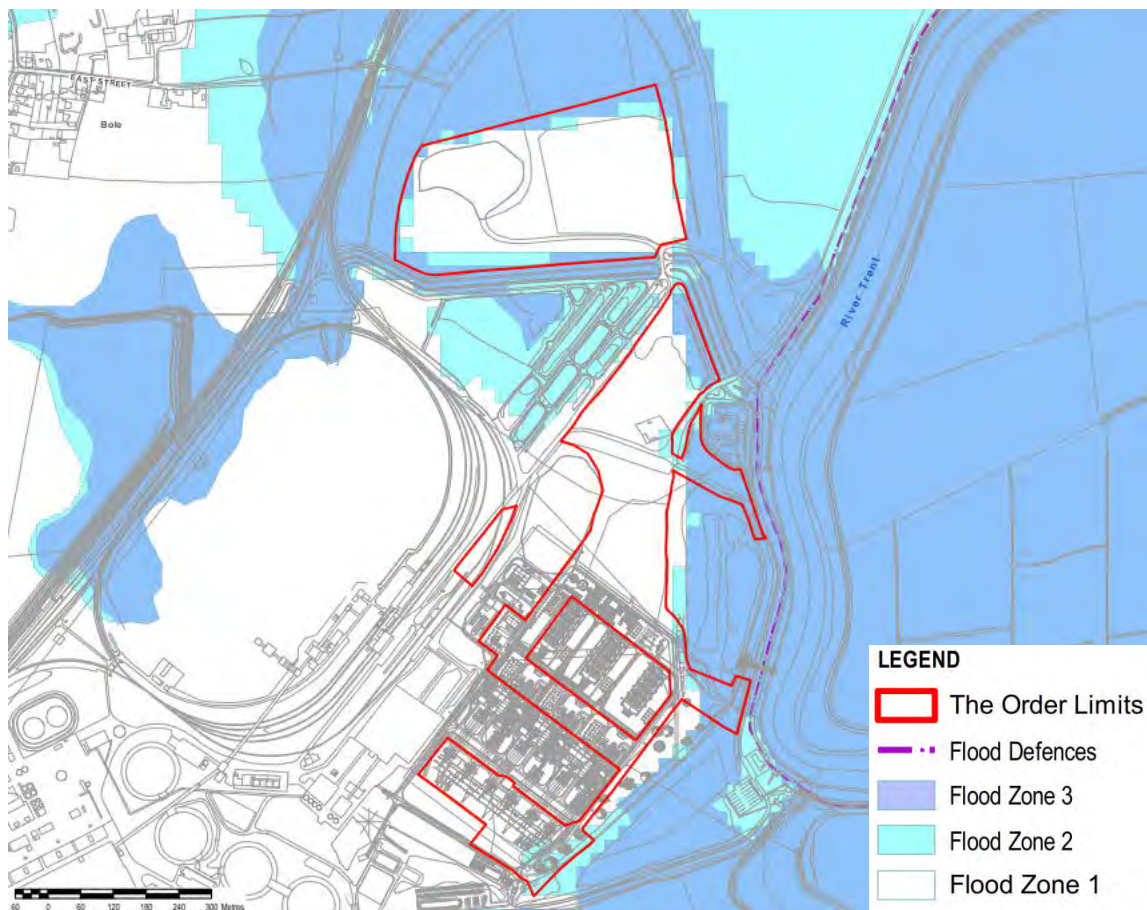
6.7.4 The majority of the Site is located within Flood Zone 1 as illustrated on **Figure NTS13**. A small part of the proposed construction laydown area (approximately 1ha) would be located in Flood Zone 2 and the northern and southern drainage



connection corridors extend into Flood Zone 3 although they do not extend onto or beyond the flood defences.

- 6.7.5 Construction works within the drainage connection corridors, specifically in areas located within Flood Zone 3, would not be undertaken when an Environment Agency Flood Warning is in place for the River Trent adjacent to the Site. At least one designated Flood Warden would be appointed on site during construction, who is familiar with the risks and remains vigilant to news reports, Environment Agency flood warnings and water levels in the River Trent.
- 6.7.6 The Proposed Development does not require any works on or in the River Trent, nor does it require any works on, or under, the existing flood defences.
- 6.7.7 Through the provision of safe access and egress (exit) routes, development of a site specific emergency evacuation plan and use of flood resilient and resistant construction, there are considered to be no significant on or off-site impacts as a result of the Proposed Development in relation to flood risk.

**Figure NTS13: flood zones**



- 6.7.8 The defined impact avoidance and mitigation measures would reduce the risk of impacts upon surface waterbodies, drainage and flood risk occurring. Effects on key receptors have predominantly been assessed as minor adverse to negligible and therefore are not considered to be significant, whilst development of the Site

would not increase the risk of flooding from fluvial, groundwater or overland flow sources.

## Operation

- 6.7.9 The operational phase of the Proposed Development would require storage, transport, handling and use of small volumes of potentially polluting substances (e.g. diesel). Throughout its lifetime, the facility would be regulated by the Environment Agency through an Environmental Permit, which would include conditions relating to handling, storage and use of diesel and other chemicals, including emergency procedures, in line with the use of BAT. These measures would be in place to prevent pollution during plant operation in accordance with the Environmental Permit. Given the nature of the impacts (largely of temporary nature) there would be no effect on WFD status and/or objectives of any waterbody in proximity to the Site.
- 6.7.10 No additional mitigation requirements have been identified in relation to surface water quality or drainage. Given the residual risk of tidal flooding from the River Trent in the event of failure or breach of the flood defences, or fluvial flooding from Wheatley Beck associated with high water levels in the River Trent, ground levels at the Site would be a minimum of 7.10m above ordinance datum (AOD) to mitigate against this risk secured by a Requirement of the draft DCO. Regular maintenance and inspection of the drainage system would be undertaken to ensure that the system continues to perform as designed.
- 6.7.11 Taking into account the defined impact avoidance and mitigation measures, the risk of impacts upon surface waterbodies, drainage and flood risk occurring has been assessed as minor adverse to negligible and not significant, whilst development of the Site would not increase the risk of flooding from fluvial, groundwater or overland flow sources.

## Decommissioning

- 6.7.12 The Proposed Development decommissioning works would be undertaken in accordance with a DEMP which would include measures to prevent pollution, similar to those that would be employed during the construction phase. On this basis, decommissioning impacts are expected to be limited to watercourses/groundwater bodies in close proximity to the Site and would be broadly similar to construction impacts (not significant).

## 6.8 Socio-economics

- 6.8.1 An assessment has been undertaken of the potential socio-economic impacts of the Proposed Development. The assessment considers:
- the present-day and future baseline socio-economic conditions during construction and at opening;

- the effects of construction and operation of the Proposed Development on socio-economics, including employment opportunities and the wider implications of the associated demand on local services; and
- the potential effects of the eventual decommissioning of the Proposed Development.

6.8.2 The results of the Socio-economic Assessment are presented in **Chapter 13: Socio-economics** (ES Volume I: Main Report) and supported by **Appendix 13A: Human Health** (ES Volume II: Appendices).

6.8.3 The construction, operation and decommissioning of the Proposed Development would be supportive of the local economy, through the creation of jobs.

6.8.4 **Chapter 4:** The Proposed Development (ES Volume: Main Report) describes the measures that have been incorporated in order to 'design-out' potential impacts that may affect health. The choice and design of plant and equipment will comply with standard industry guidelines set to protect human health, including construction workers and operational staff.

6.8.5 As a result, no significant EMF related effects have been identified. All other health-related residual effects described in the relevant technical chapters are classified as not significant.

### Construction

6.8.6 The Proposed Development would represent an opportunity to create a range of jobs during the construction phase, both directly and indirectly, and across a wide range of sectors and skills. It is currently anticipated that (subject to the necessary consents being granted and an investment decision being made) the earliest date that construction work would commence is around Q3 2020 over a period of up to four years. A more likely construction programme would be within three years from commencement. Based on experience of similar projects, the Proposed Development is anticipated to create an average of approximately 95 temporary construction jobs, with a peak of circa 200 during the construction period. Although these jobs would be temporary, they would provide a positive economic impact. The direct expenditure involved in the construction phase would lead to increased output generated in the local economy (Workshop and Retford Travel to Work Area (TTWA)).

6.8.7 The magnitude of impact associated with the creation of short-term employment during the construction phase is considered to be low, as employment relating to the Proposed Development would represent less than 1% of the TTWAs construction workforce. The direct, indirect and induced employment created by the construction phase of the Proposed Development is therefore likely to have a minor short-term beneficial effect, which would not be significant in terms of the Workshop and Retford TTWA's economy.

## Operation

6.8.8 During the Proposed Development operational phase, employment would be generated in operative, management and maintenance roles in relation to the electricity generating station and its maintenance. Operation of the Proposed Development is anticipated to create up to 15 operational roles. Some of the roles are expected to be undertaken by existing West Burton/Cottam Power Station employees. Temporary and contractor employees associated with maintenance activities would also be employed as required. Such an operational effect is assessed as beneficial, although, not significant.

## Decommissioning

6.8.9 The workforce employed to decommission the Proposed Development would have a positive effect on the economy by spending their wages, in the same way as those employed during the construction and operation phases. It is envisaged that the Proposed Development would have an operational life of up to circa 40 years, therefore decommissioning activities are currently anticipated to commence after 2063. At this stage, the significance of the employment effects is uncertain due to limited information available regarding decommissioning methods, timescales and associated staffing requirements.

6.8.10 The socio-economic assessment indicates that the Proposed Development would have an overall positive impact on the economy in the study area, through the provision of employment and through associated effects. However, in light of the scale of these impacts and the prevailing economic conditions within the study area, these positive effects are not of a scale that would be classified as significant.

## 6.9 Cultural Heritage

6.9.1 This assessment addresses the potential effects of the Proposed Development on cultural heritage assets. It identifies the location, type and significance of cultural heritage assets and their setting, and reports on the predicted impacts of the Proposed Development on these resources. The assessment considers the likely significance of effects upon cultural heritage assets by reference to their significance and the magnitude of any impacts.

6.9.2 The results of the Cultural Heritage Assessment are presented in **Chapter 14: Cultural Heritage** (ES Volume I: Main Report) and supported by **Appendix 14A: Desk Based Assessment** (ES Volume II: Appendices); **Figure 14.1** and **Figure 14.2** (ES Volume III: Figures); and the Outline Written Scheme of Investigation (WSI) (**Application Document Ref. 7.9**).

## Construction

6.9.3 Construction effects consider the setting impacts on above ground Scheduled Monuments (if present) and Built Heritage, as the buildings and structures of the

Proposed Development are installed and constructed. They also consider potential effects on below-ground archaeology including below ground scheduled monuments.

- 6.9.4 Impacts on below ground archaeology have been assessed. No impacts on the setting of West Burton Deserted Medieval Village Scheduled Monument (**Plate 1**) are predicted, giving rise to a negligible effect (not significant).

**Plate 1: St Helens Churchyard within the West Burton Deserted Medieval Village Scheduled Monument, looking north-west**



- 6.9.5 A minor adverse (not significant) visual impact is predicted to the setting of Segelocom Roman town Scheduled Monument (**Plate 2**).

## Plate 2: View North from Segelocum Roman Town to West Burton Power Station



- 6.9.6 Impacts on potential buried archaeology will be mitigated through appropriate appraisal of the presence of such deposits in the existing ground underlying the Site, noting that a substantial depth of PFA overlies that ground across the majority of the Proposed Power Plant Site. The appraisal will be undertaken in accordance with an approved Written Scheme of Investigation (WSI), based on the Outline WSI as presented in **Application Document Ref. 7.9** proposed to be secured by a Requirement of the draft DCO, which will be used to characterise and record any findings should they arise.
- 6.9.7 This mitigation and monitoring programme would enable an assessment of the archaeological potential and value of deposits to be made.
- 6.9.8 Evaluation during detailed design would allow for preservation in situ (where discovered) of archaeological remains, where reasonably practicable. Where not reasonably practicable, a strategy for archaeological recording to preserve the remains impacted by record would be developed. The result of preservation in-situ, where reasonably practicable, would reduce the significance of effect on potential buried archaeology from at most moderate adverse (significant) to minor adverse (not significant). Should preservation by record of any below ground archaeological deposits be the only reasonably practicable option, the effect would remain as at most, moderate and adverse (significant) as, whilst it is noted that there is potential to uncover remains of our past and generate records through the

Proposed Development, the benefit or otherwise of this has not been considered as a factor that either mitigates or reduces any identified adverse effects.

- 6.9.9 Impacts on built heritage for a range of receptors have been assessed. Impacts to the setting of Bole Manor House (Grade II listed) and the setting of Church of St Martin, Bole (Grade II listed) are predicted as minor adverse (not significant). The impact to WBA Power Station (non-designated heritage asset) as a consequence of the Proposed Development is assessed as negligible (not significant).

### Operation

- 6.9.10 Operational effects can result from elements such as lighting and noise. No effects upon archaeology or built heritage assets are considered to result from the operational phase of the Proposed Development that are above or beyond those that have been assessed for construction impacts.

### Decommissioning

- 6.9.11 The strategy for eventual Proposed Development decommissioning is not yet known. However, there would be no physical impacts to buried cultural heritage assets during decommissioning as any impact upon archaeological remains would have been mitigated during the construction phase.
- 6.9.12 There would be potential temporary indirect impacts to the setting of designated assets in the wider study area during decommissioning, resulting from the use of machinery to disassemble the Proposed Development. Decommissioning is likely to affect the setting of the Bole Manor House and the Church of St Martin, Bole (Grade II listed). However, impacts would be no greater than those recorded during Proposed Development construction and operation (reported above), and thus the effects would not be significant.

## 6.10 Sustainability, Waste and Climate Change

- 6.10.1 The assessment addresses the potential effects of the Proposed Development on sustainability, focussing on climate change, and waste (construction and operational waste).
- 6.10.2 Design and operational measures to increase the resilience of the Proposed Development to potential effects of climate change would be incorporated in the detailed design, including flood resilience measures.
- 6.10.3 The Proposed Development would provide additional peak power generation capacity, which would contribute to providing a secure energy supply to the national grid. An operational annual greenhouse gas (GHG) footprint of the Proposed Development has been calculated, using the Greenhouse Gas Protocol, which provides a methodology for calculating the carbon footprint of a project. The total annual carbon footprint of the Proposed Development is estimated to be between 240 kilotonnes and 289 kilotonnes carbon dioxide equivalent (CO<sub>2</sub>e) -

this is equivalent to between 470 and 566 tonnes CO<sub>2e</sub> per GWh electricity generation.

6.10.4 **Appendix 15A:** Greenhouse Gas Assessment (ES Volume II: Appendices) demonstrates that the GHG emissions from the Proposed Development, when compared with UK average fossil fuel power stations, would produce an additional 10 tonnes (best case) to 106 tonnes (worst-case) of CO<sub>2e</sub> per GWh of electricity generated, depending on the final thermal efficiency of the Proposed Development. The Proposed Development is a peaking plant to be used for short periods of time, operating for up to the maximum allowed under its Environmental Permit, which is anticipated to be approximately 1,500 hours per annum on a rolling five year average. It is therefore likely to be less efficient than the grid average. Despite this, the Proposed Development will outperform existing average UK coal power stations by between 448 tonnes (best case) and 352 tonnes (worst case) of CO<sub>2e</sub> per GWh, depending on the final thermal efficiency of the Proposed Development. Whilst the UK is moving towards decarbonising the grid, efficient gas fired power stations are required as an important element of the overall transition fuel mix in order to ensure the UK's energy security.

6.10.5 With adoption of appropriate waste management practices during Proposed Development construction, operation and decommissioning, including following the principles of the Waste Hierarchy and considering the low estimated volumes of waste, no significant residual effects with respect to waste are anticipated.

6.10.6 It is not expected that significant volumes of PFA or waste spoil are generated through construction of the Proposed Development that would require off-site disposal. A Framework Site Waste Management Plan is provided in the Framework CEMP (**Application Document Ref 7.3**).

## 6.11 Cumulative and Combined Effects

6.11.1 As required by the 2009 EIA Regulations, when considering the potential environmental effects of the Proposed Development, there is a need to consider the potential for cumulative and combined effects defined as follows:

- **cumulative effects:** such effects may arise where the impacts associated with the Proposed Development have the potential to interact with those associated with one or more other developments located in proximity to the Proposed Development (e.g. air quality); and
- **combined effects:** such effects may arise when several different impacts resulting from the Proposed Development (e.g. decrease in air quality, increase in noise disturbance) have the potential to affect a single receptor or feature.

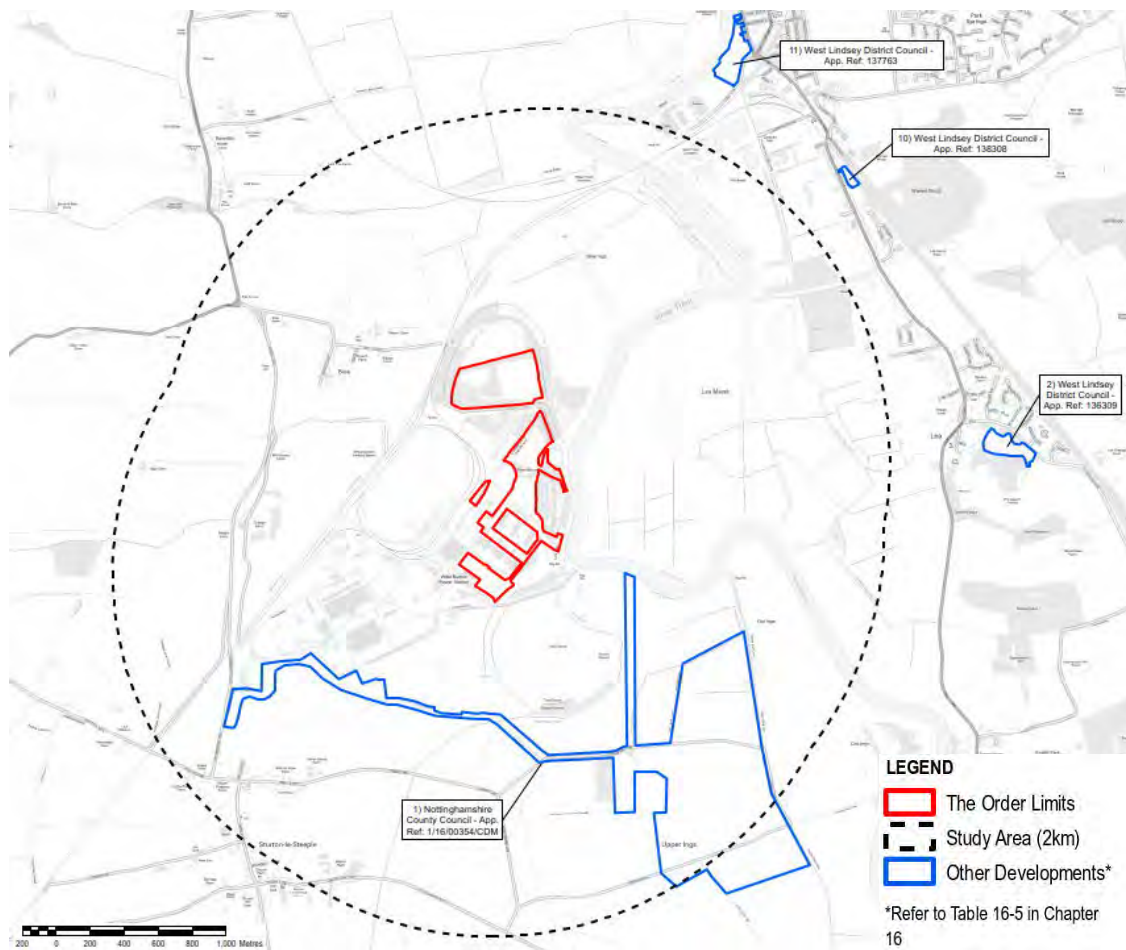
6.11.2 **Chapter 16:** Cumulative and Combined Effects (ES Volume I: Main Report) provides details of other proposed schemes in the vicinity of the Proposed Development which were initially considered. Of the developments identified, only



those illustrated on **Figure NTS14** were considered to have the potential to generate potential cumulative effects and thus scoped into the assessment:

- A quarry access road and wider mineral extraction site (16/00354/CDM);
- Residential development of 61 dwellings (WLDC - 136309);
- Mixed-Use development including 220 dwellings (WLDC – 137763); and
- Residential development of 16 dwellings (WLDC – 138308).

**Figure NTS14: Short-List of development considered for cumulative effects assessment**



6.11.3 Effects during construction of both the Proposed Development and quarry access road (and wider mineral extraction site) on visual amenity have been assessed. Short distance views of the quarry access road are available from Viewpoint 9 (junction of PRow at Footpath Sturton-le-Steeple FP17, Restricted Byway Sturton-le-Steeple RB32, Common Lane) and Viewpoint 10 (junction of Bridleway Sturton-le-Steeple BW13, footpath Sturton-le-Steeple FP40 and Sturton-le-Steeple FP39). It is assessed that overall, cumulative landscape and visual effects are likely to remain the same as those reported for the Proposed Development in isolation given that a scheme of mitigation has been agreed by NCC for the quarry, including the access road to reduce the significance on visual amenity at viewpoints on the surrounding network of footpaths.

- 6.11.4 Mitigation measures being proposed by the quarry access road developer including bunding, planting of hedgerows and/or trees would mitigate visual effects resulting from construction and operation of the quarry access road. It is considered that additional mitigation beyond that proposed by the Applicant and the quarry access road developer for their respective schemes is not required to address cumulative effects, given the locations of the developments relative to the viewpoints.
- 6.11.5 The potential for cumulative effects of the Proposed Development and the three residential developments in Lea, Gainsborough have been assessed. Traffic associated with the residential schemes (together with other schemes such as the quarry access road) has been taken into account in the future year analysis of traffic and transport effects. Therefore, the cumulative traffic and transport effects would be negligible and therefore not significant, as reported in **Chapter 7: Traffic and Transport** (ES Volume I: Main Report).
- 6.11.6 The potential for cumulative effects due to air quality on Lea Marsh Site of Special Scientific Interest (SSSI) and the Lea Meadow LWS have also been assessed. Construction impacts on these features resulting from the residential developments would be avoided due to distance. Residual effects due to road traffic and other operational effects would be as reported in **Chapter 6: Air Quality** for the Proposed Development in isolation (negligible adverse) and therefore are considered not significant.
- 6.11.7 With regard to combined effects, given the impact avoidance and mitigation measures proposed (as detailed in **Chapters 6-15** of the ES (ES Volume I: Main Report)), potentially significant combined effects are not anticipated.

## 7. Summary and Conclusions

- 7.1.1 The ES (ES Volume I: Main Report) considers the potential environmental impacts and effects of the Proposed Development during construction, commissioning, operation (including maintenance) and decommissioning phases.
- 7.1.2 The Proposed Development is set within the existing West Burton Power Station site, and has been sited and will be designed to be in keeping with the surrounding infrastructure. This has helped to minimise the potential for significant adverse environmental effects.
- 7.1.3 **Section 6** of this NTS and **Chapters 6-16** of the ES (ES Volume I: Main Report) have considered the potential environmental impacts and effects of the Proposed Development, including the identification of potential adverse and beneficial environmental effects that would be considered significant (i.e. moderate and major effects) both before, and after mitigation and enhancement measures are taken into account.
- 7.1.4 A range of environmental impact avoidance, design and mitigation measures have been identified to mitigate and control environmental effects during construction,

operation and decommissioning phases of the Proposed Development. Where these are not embedded in the design of the Proposed Development, they would be secured through a number of 'requirements' (similar to planning conditions attaching to a planning permission) contained within the DCO.

- 7.1.5 The ES indicates that a potentially significant adverse residual effect of the Proposed Development (i.e. after mitigation has been taken into account) would be a moderate adverse visual amenity effect during Proposed Development construction, operation and decommissioning on Viewpoint 4 (users of PRow Bole FP3B/Bole FP4/residents at Bole; illustrated on **Figures NTS12a – 12c**). Such adverse effects cannot be mitigated further, for example by additional planting, as the visual effects relate to the height and massing of the structures that comprise the Proposed Development.
- 7.1.6 Removal or damage of potential below ground archaeological deposits (dating from the prehistoric to the medieval period) during construction, including where piling of foundations or earthworks along the northern or southern drainage connection corridor route (if chosen) are required could also result in a moderate adverse significant residual effect if preservation by record is the only reasonably practicable option. Preservation in-situ, where reasonably practicable, would reduce the significance of effect on potential buried archaeology to minor adverse (not significant).
- 7.1.7 No other significant residual effects are predicted as a consequence of the Proposed Development.