

SLOUGH MULTIFUEL EXTENSION PROJECT



ENVIRONMENTAL IMPACT ASSESSMENT

SCOPING REPORT NOVEMBER 2021

Quality information

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1 Introduction

1.1 Background

- 1.1.1 SSE Slough Multifuel Limited ('SMF') ('the Applicant') has commissioned this Environmental Impact Assessment (EIA) Scoping Report for the Slough Multifuel Extension Project (hereafter referred to as the 'Proposed Development'). The Proposed Development comprises works to increase the efficiency and output of a generating station consented in June 2017 under the Town and Country Planning Act 1990 (Ref 1) (TCPA) regime with capacity up to 50 megawatts (MW) (Planning Ref. P/00987/024 and P/00987/025), to achieve up to 60MW electrical output (MWe). As the electrical output now exceeds 50MWe the Proposed Development requires development consent (granted in the form of a Development Consent Order) under Section 31 of The Planning Act 2008 (Ref 2) (refer to section 1.3 of this Scoping Report for further explanation as to why a development consent is required).
- 1.1.2 The land for the Proposed Development (the 'Site') is located on part of the Slough Heat and Power (SHP) site at 342 Edinburgh Avenue, Slough, SL1 4TU, approximately 2.5 kilometres (km) northwest of Slough Town Centre, within the Slough Trading Estate, grid reference SU 953 814 and is denoted by the red line on Figure 1 and Figure 2. The Site is described in *Chapter 2: The Existing Site and Consented Scheme* of this Scoping Report.
- 1.1.3 The consented scheme (up to 50MWe) was granted planning permission by Slough Borough Council in June 2017 and site works commenced in May 2021. Demolition work is already complete onsite, with construction works underway and with steel works expected to be visible above ground at the time of submitting the application for the Proposed Development.
- 1.1.4 The Proposed Development involves improving the efficiency with an increase in the gross generation of the consented scheme currently under construction from up to 50MWe to up to 60MWe. This increase in gross generation capacity will be achieved through a number of physical works that are 'engineering operations' and therefore 'development' for the purposes of Section 32 of The Planning Act 2008. The engineering operations of which the majority are internal, include the installation of primary and secondary air preheating systems to the boilers to increase the thermal efficiency of the generating station, including heat exchanger bundles, pipework, valves, pipe supports, thermal insulation, instrumentation, cabling and containment, mechanical modifications to the steam turbine inlet control valve to increase the steam capacity and to the turbine control system and distributed control system to allow for an increase in the gross output of the generating station. The increase in generation capacity and the associated engineering operations, together represent the 'Extension' of the Slough Multifuel generation station. The majority of these works will be internal and contained within the consented building envelope which will remain unchanged; only a small section of the pipe work will be external. There will be no increase in permitted vehicle movements required for the Proposed Development works. Full details of the Proposed Development are described in *Chapter 3: Description of the Proposed Development*.
- 1.1.5 This Scoping Report forms a part of formal request for a Scoping Opinion under Regulation 10(1) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended in 2018) (the 'EIA Regulations') (Ref 3).

1.2 The Applicant

- 1.2.1 The Applicant is SSE Slough Multifuel Limited (SMF). SMF was established in April 2020 and is a 50:50 joint venture between, SSE Thermal and Copenhagen Infrastructure Partners (CIP).

- 1.2.2 SSE Thermal, part of the FTSE-listed SSE plc, is a leading developer, owner and operator of flexible generation, energy-from-waste, and energy storage assets, with over 600 direct employees across the UK and Ireland. SSE Thermal's vision is to become the leading provider of flexible thermal energy in a net-zero world. SSE Thermal was granted planning permission in June 2017 to construct the Slough Multifuel Facility at the Site. SSE Thermal currently operates the Slough Heat and Power Plant.
- 1.2.3 Copenhagen Infrastructure Partners (CIP) was founded in 2012 and is a fund management company specialised in offering tailor made investment in energy infrastructure assets globally, in particular within the renewable energy sector. CIP are renewable market pioneers with involvement in some of the World's largest offshore wind projects and other major energy infrastructure projects in North-Western Europe, North America, and Asia Pacific. CIP has extensive biomass and energy from waste experience in the UK.

1.3 Legislative Context and Need for Environmental Impact Assessment

- 1.3.1 The Proposed Development is defined as a Nationally Significant Infrastructure Project (NSIP) under Sections 14(1)(a) and 15(2) of the Planning Act 2008 (Ref 2) as an extension of an onshore generating station in England, which (when extended) would have a capacity more than 50 MW.
- 1.3.2 The EIA requirement for NSIP developments is transposed into law through the EIA Regulations. The EIA Regulations specify which developments are required to undergo EIA and schemes relevant to the NSIP planning process are listed under either 'Schedule 1' or 'Schedule 2'. Developments listed in Schedule 1 must be subject to EIA, while developments listed in 'Schedule 2' must only be subjected to EIA if they are considered "likely to have significant effects on the environment by virtue of factors such as its nature, size or location". The criteria on which this judgement must be made are set out in Schedule 3.
- 1.3.3 The Proposed Development is a 'Schedule 2' development. Paragraph 13 of Schedule 2 refers to: "*Any change to or extension of development of a description listed in Schedule 1 to these Regulations (other than a change or extension falling within paragraph 21 of that Schedule) or in paragraphs 1 to 12 of this Schedule, where that development is already authorised, executed or in the process of being executed, and the change or extension may have significant adverse effects on the environment*".
- 1.3.4 The consented generating station (which falls within paragraph 3(a) of Schedule 2 of the EIA Regulations as it constitutes "Industrial installations for the production of electricity, steam and hot water" and paragraph 3(b) of Schedule 2 of the EIA regulations as it may also constitute "industrial installations for carrying gas, steam and hot water...") is already authorised and is in the process of being constructed. The Proposed Development comprises a change to or extension of the consented generating station and as such falls into Paragraph 13 of Schedule 2.
- 1.3.5 It is considered that due to the Proposed Development's nature, it would be prudent to carry out an EIA. The Applicant therefore wishes to confirm under Regulation 8(1)(b) of the EIA Regulations that an Environmental Statement (ES) will be provided in respect of the application for development consent for the Proposed Development, as it is considered there is the potential for the Proposed Development to meet the criteria set out in Schedule 3 of the EIA Regulations.
- 1.3.6 Following the completion of the surveys, assessments, and consultation processes outlined in this Scoping Report, an application for a DCO will be made to the Secretary of State (SoS) for determination in accordance with the Planning Act 2008 (PA 2008) (Ref 2). The DCO application will be accompanied by an ES, in accordance with Regulation 5(2)(a) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 ('APFP Regulations') (Ref 4). The ES will set out the methods and findings of a comprehensive EIA undertaken in line with the EIA Regulations.

- 1.3.7 The Localism Act 2011 (Ref 5) appointed the Planning Inspectorate as the agency responsible for operating the DCO process for NSIPs. The SoS will appoint an Examining Authority from the Planning Inspectorate, who will examine the application for the Proposed Development and make a recommendation to the SoS, who in turn will make the decision on whether to grant or to refuse the DCO.
- 1.3.8 In accordance with Section 104(2) of the Planning Act 2008, the SoS is required to have regard to the relevant National Policy Statement (NPS), amongst other matters such as local policy, when deciding whether or not to grant a DCO. These are discussed in the following subsection.

1.4 Planning Policy and Context

National Policy Statements

- 1.4.1 Under the PA 2008 (Ref 2) regime, the policy framework for examining and determining applications for development consent is provided by National Policy Statements (NPSs). Section 5 of the PA 2008 allows the relevant SoS to designate NPSs setting out national policy in relation to the types of NSIPs listed at Section 14 of the PA 2008. The NPSs are the primary policy used by the relevant SoS to examine and determine applications for NSIPs.
- 1.4.2 Section 104 of the PA 2008 requires the SoS to determine applications for NSIPs in accordance with the relevant NPSs having regard to any local impact report produced by the relevant local planning authority; any matters prescribed in relation to development of the description to which the application relates; and any other matters which the SoS thinks are both “*important and relevant*” to their decision, unless this would:
- lead to the UK being in breach of its international obligations;
 - be in breach of any statutory duty that applies to the SoS;
 - be unlawful;
 - the adverse impacts of the development outweigh its benefits; or
 - be contrary to any regulations that may be made prescribing other relevant conditions.
- 1.4.3 In July 2011 the SoS for the Department of Energy and Climate Change (now BEIS) designated a number of NPSs relating to nationally significant energy infrastructure. These include an overarching NPS and a number of technology specific NPSs. The NPSs that are of relevance to the Proposed Development are the:
- Overarching National Policy Statement for Energy (EN-1) (Ref 6) ('EN-1'); and the
 - National Policy Statement for Renewable Energy Infrastructure (EN-3) (Ref 7) ('EN-3').
- 1.4.4 EN-1 (Part 3) confirms the need that exists in the UK for new electricity generating capacity. Paragraph 3.1.1 states that the UK needs all types of energy infrastructure covered by the NPS in order to achieve energy security at the same time as dramatically reducing greenhouse gas emissions. Paragraph 3.1.2 goes on to state that it is for industry to propose the type of energy infrastructure and that the Government does not consider it appropriate for planning policy to set targets for or limits on different technologies.
- 1.4.5 Notably, paragraph 3.1.3 stresses that the SoS should assess applications for development consent for the types of infrastructure covered by the energy NPSs “... *on the basis that the Government has demonstrated that there is a need for those types of infrastructure...*”. Paragraph 3.1.4 confirms that the SoS should give substantial weight to the contribution that all projects would make toward satisfying this need when considering applications under the PA 2008. As such, EN-1 is clear that the need that exists for new energy infrastructure is not open to debate or interpretation.

- 1.4.6 Part 4 of EN-1 sets out a number of 'Assessment Principles' that must be taken into account by applicants and the SoS in preparing and determining applications for nationally significant energy infrastructure. General points include (paragraph 4.1.2) the requirement for the SoS, given the level and urgency of need for the infrastructure covered by the energy NPSs, to start with a presumption in favour of granting consent for applications for energy NSIPs. This presumption applies unless any more specific and relevant policies set out in the relevant NPS clearly indicate that consent should be refused or any of the considerations referred to at Section 104 of the PA 2008 (noted above) apply.
- 1.4.7 Other assessment principles include the matters to be covered within any ES; the Habitats and Species Regulations; the consideration of alternatives; criteria for 'good design'; grid connection; consideration of Combined Heat and Power; consideration of Carbon Capture and Storage/Carbon Capture Readiness; climate change adaptation; pollution control and environmental regulatory regimes; safety; hazardous substances; health; common law and statutory nuisance and security, amongst others.
- 1.4.8 Part 5 of EN-1 deals with the 'Generic Impacts' of energy infrastructure. These include impacts that occur in relation to all or most types of energy infrastructure in addition to others that may only be relevant to certain technologies. Paragraph 5.1.2 stresses that the list of impacts is not exhaustive and that applicants should identify the impacts of their developments in the ES in terms of both those covered by the NPSs and others that may be relevant. Generic impacts include land use; socioeconomics; air quality and emissions; noise and vibration; dust, odour, artificial light, steam and smoke; traffic and transport; civil and military aviation; biodiversity and geological conservation; historic environment; landscape and visual; water quality and resources; flood risk and waste, amongst others. In relation to each of the generic impacts listed within Part 5, guidance is provided on how applicants should assess these within their application and also the considerations that the SoS should take into account in decision-making.
- 1.4.9 EN-3 identifies that recovering energy from the combustion of waste plays an important role in meeting renewable energy targets. It also highlights the benefits of waste energy infrastructure insofar as such infrastructure prevents waste moving down the waste hierarchy.
- 1.4.10 In addition to the assessment principles and generic impacts covered by EN-1, EN-3 sets out the factors and 'Assessment and Technology Specific' considerations to be taken into account in the preparation and assessment of applications for biomass and waste energy infrastructure, including air quality and emissions, landscape and visual, noise, waste and residue management, biodiversity, water quality and resources and siting in relation to transport infrastructure.
- 1.4.11 On 27 June 2019, following advice from The Climate Change Committee, the UK Government announced a new carbon reduction 'Net Zero' target for 2050. This was given effect by an amendment to the Climate Change Act 2008 (Ref 8) (the target for the net UK carbon emissions for 2050 changed from 80% to 100% below the 1990 baseline).
- 1.4.12 In response to the Net Zero target, the Government's Energy White Paper (Ref 9) ('EWP'), published in December 2020, confirmed that the SoS for BEIS had decided that it was appropriate to review the suite of NPSs for energy infrastructure, to ensure that they reflected the policies set out in the EWP, and that the Government continues to have a planning policy framework that can deliver the investment required to build the infrastructure needed for the transition to Net Zero by 2050.
- 1.4.13 The Government is currently consulting on draft updated energy NPSs. That consultation runs until 29 November 2021. It is anticipated that the Government will designate the updated NPSs around the middle of 2022.
- 1.4.14 While the review of energy NPSs is undertaken, the current suite of NPSs remains relevant Government policy and has effect for the purposes of the PA 2008. They therefore continue to provide a proper basis on which PINS can examine, and the SoS can make decisions on, applications for energy NSIPs. This has been confirmed in recent SoS decisions on development consent applications.

Other Matters that may be 'Important and Relevant'

- 1.4.15 In making decisions on applications for NSIPs, Section 104 of the PA 2008 states that the SoS must also have regard to any other matters that he or she considers to be both “*important and relevant*” to their decision. Paragraph 4.1.5 of EN-1 provides some clarification on the other matters that the SoS may consider both important and relevant. These may include the policies contained within the National Planning Policy Framework and also the statutory development plan.
- 1.4.16 EN-1 is clear, reflecting the terms of the PA 2008, however, that in the event of a conflict between these and any other documents and a NPS, the latter prevails for the purposes of SoS decision-making, given the national significance of the infrastructure concerned.

National Planning Policy Framework

- 1.4.17 The latest version of the National Planning Policy Framework (Ref 10) (NPPF) was adopted in February 2019. The policies contained within the NPPF are expanded upon and supported by the ‘Planning Practice Guidance’.
- 1.4.18 The NPPF sets out the Government’s planning policies for England and how these are to be applied. It is a material consideration in planning decisions. Paragraph 3 of the NPPF makes it clear that the document does not contain specific policies for NSIPs and that applications in relation to NSIPs are to be determined in accordance with the decision-making framework set out in the PA 2008 and the relevant NPSs, as well as any other matters that are considered both important and relevant. However, paragraph 3 goes on to confirm that the matters that can be considered to be both important and relevant to NSIPs may include the NPPF and the policies within it.
- 1.4.19 Policies in of the NPPF that are considered to be of relevance to the Proposed Development include:
- 2 - Achieving sustainable development
 - 6 - Building a strong, competitive economy
 - 11 - Making effective use of land
 - 12 - Meeting the challenge of climate change, flooding and coastal change

Local Planning Policy

- 1.4.20 The Proposed Development is located entirely within the administrative area of Slough Borough Council (‘SBC’), a unitary local authority. The statutory development plan for Slough comprises the following development plan documents:
- The Core Strategy Development Plan Document 2006 - 2026 (Ref 10) (2008).
 - Site Allocations Development Plan Document (Ref 12) (2010).
 - Local Plan Saved Policies (Ref 13) (2004).
 - Waste Local Plan for Berkshire Saved Policies (Ref 14) (1998).
- 1.4.21 The following policies from the Core Strategy (2008) are considered of particular relevance:
- Core Policy 1 - Spatial Strategy.
 - Core Policy 5 - Employment.
 - Core Policy 7 - Transport.
 - Core Policy 8 - Sustainability and the Environment.
 - Core Policy 10 - Infrastructure.
- 1.4.22 The following saved policies from the Local Plan (2004) are also considered of relevance to the Proposed Development:
- EMP7 - Slough Trading Estate.
 - EN1 - Standard of Design.
 - EN3 - Landscaping Requirements.

- 1.4.23 SBC is in the early stages of preparing a new Local Plan for the borough to cover the period 2016 to 2036. The Spatial Strategy underwent consultation between November 2020 and January 2021. SBC is yet to publish the responses to the consultation. The new Local Plan is not scheduled for examination until 2023, with adoption following that. As such, given its early stage of preparation, the new Local Plan can be afforded little weight.
- 1.4.24 The Proposed Development's compliance with the NPSs and other relevant planning policies will be considered in detail within the Planning Statement that will form part of the Applicant's application for development consent.

1.5 Purpose and Structure of the Scoping Report

- 1.5.1 The EIA Regulations set out the requirements for an applicant who proposes to request a scoping opinion from the SoS. Regulation 10(3) of the EIA Regulations requires that a Scoping Report includes:
- A plan sufficient to identify the land;
 - A description of the proposed development, including its location and technical capacity;
 - An explanation of the likely significant effects of the development on the environment; and
 - Such other information or representations as the person making the request may wish to provide or make.
- 1.5.2 The purpose of this EIA Scoping Report is therefore to:
- Provide a summary of the Proposed Development;
 - Set out the proposed scope of work and methods to be applied in carrying out the EIA; and
 - Set out the proposed structure and coverage of the ES to be submitted with the DCO application.
- 1.5.3 This Scoping Report is set out in accordance with guidance provided by the Planning Inspectorate's Advice Note 7 'Screening, Scoping and Preliminary Environmental information' (Ref 15).
- 1.5.4 Table 1-1 lists the suggested requirements identified in Advice Note 7 and details where they are presented in this Scoping Report. The requirements of the EIA Regulations regarding the content of the ES are also covered within the contents tabulated below.

Table 1-1 Contents for the Scoping Report based on Advice Note 7

<i>Suggested Scoping Report Contents</i>	<i>Location in this Scoping Report</i>
<i>The Proposed Development</i>	
<ul style="list-style-type: none"> • A description of the Proposed Development and explanation of the approach to addressing uncertainty where it remains in relation to elements of the Proposed Development e.g., design parameters 	Chapter 3 (Description of the Proposed Development)
<ul style="list-style-type: none"> • referenced plans presented at an appropriate scale to clearly convey the information and all known features associated with the Proposed Development 	Figure 1 (Proposed Development Location) Figure 2 (Site Setting) Figure 3A (Proposed Development Site Boundary) Figure 3B Consented Multifuel Scheme Figure 4 (Environmental Constraints) Plate 3.1 – 3D Model Aerial View of Consented Scheme with external pipework and pipe supports (Note – Proposed Development external pipework is coloured blue) Plate 3.2 – 3D Model Close-up Aerial View of Consented Scheme with external pipework and pipe supports (Note – Proposed Development external pipework is coloured blue) Plate 3.3 – 3D Model Aerial View (from aerial location to east of Site) of Consented Scheme with external pipework and pipe supports (Note –

<i>Suggested Scoping Report Contents</i>	<i>Location in this Scoping Report</i>
	Proposed Development external pipework is coloured blue)
EIA Approach and Topic Areas	
<ul style="list-style-type: none"> an outline of the reasonable alternatives considered and the reasons for selecting the preferred option; 	Chapter 4 (Alternatives)
<ul style="list-style-type: none"> a summary table depicting each of the aspects and matters that are requested to be scoped out allowing for quick identification of issues; 	Chapter 15 (Summary and Conclusions)
<ul style="list-style-type: none"> a detailed description of the aspects and matters proposed to be scoped out of further assessment with justification provided; 	Chapters 13 (Topics to be Scoped Out)
<ul style="list-style-type: none"> results of desktop and baseline studies where available and where relevant to the decision to scope in or out aspects or matters 	Chapters 7 to 12 (Technical Topics)
<ul style="list-style-type: none"> aspects and matters to be scoped in, the report should include details of the methods to be used to assess impacts and to determine significance of effect e.g., criteria for determining sensitivity and magnitude; 	Chapter 6 (Environmental Impact Assessment Methodology) Chapters 7 to 12 (Technical Topics)
<ul style="list-style-type: none"> any avoidance or mitigation measures proposed, how they may be secured and the anticipated residual effects; 	Chapters 7 to 12 (Technical Topics)
Information Sources	
<ul style="list-style-type: none"> references to any guidance and best practice to be relied upon; 	Chapters 7 to 12 (Technical Topics)
<ul style="list-style-type: none"> evidence of agreements reached with consultation bodies (for example the statutory nature conservation bodies or local authorities); and 	Chapter 5 (Consultation) Chapters 7 to 12 (Technical Topics))
<ul style="list-style-type: none"> an outline of the structure of the proposed ES. 	Chapter 14 (Structure of the ES)

1.5.5 A glossary and abbreviation list are presented at the back of this report (refer to Appendix B and Appendix C respectively).

1.6 IEMA Quality Mark

1.6.1 AECOM is an IEMA Registered Impact Assessor and holds the IEMA EIA Quality Mark as recognition of the quality of our EIA product and continuous training of AECOM's environmental consultants. A Statement of Competence will be included within the ES, outlining the relevant expertise or qualifications of the experts who prepared the ES.



2 The Existing Site and Consented Scheme

2.1 Introduction

2.1.1 This chapter presents a description of the existing site and the consented scheme (the construction and operation of the Slough Multifuel Facility).

2.2 Description of the Site

The Site

2.2.1 The Proposed Development Site (the 'Site') is broadly located within the existing Slough Heat and Power CHP site, which is situated within the Slough Trading Estate, a major employment area within Slough. Figure 1 presents the location of the Site.

2.2.2 The National Grid Reference of the centre of the Site is SU 953 814. The topography at the Site is predominately flat and approximately 32m above ordnance datum (AOD).

2.2.3 The Site is broadly the same as the site for the consented Slough Multifuel facility, albeit it includes Cooling Tower 8 which was omitted from the consented scheme (because it was not being modified and was previously intended to be a shared service with other activities within the Slough SHP site, which is now not the case for the Proposed Development).

2.2.4 The Site is located both to the north and south of Edinburgh Avenue and previously contained impermeable hardstanding and numerous buildings and structures including boiler houses, turbine halls, fuel storage facilities, switch rooms, control rooms, offices and various other ancillary plant associated within power generation. These decommissioned plant and buildings have been cleared in advance of construction work starting on the consented Slough Multifuel Facility.

2.2.5 Slough Heat and Power (SHP) Plant, which is the wider site within which the consented scheme and Proposed Development sits, provides various services to businesses on the Slough Trading Estate, including electricity distribution and distribution and supply of heat and potable water. SHP also provides other ancillary services for the SHP site such as water treatment, operations and maintenance, and cooling water.

2.2.6 The SHP Plant is designed, operated, and permitted in accordance with the Waste Incineration Directive (WID), now transposed into the Industrial Emissions Directive (IED) (Special Provisions for Waste Incineration Plants and Waste Co-Incineration Plants) (2010/75/EU)(Ref 16), and operates independently with a separate fuel store and deliveries.

2.2.7 Together with the Proposed Development, those facilities will continue to retain separately metered output and discrete points of connection to the local electricity network.

2.2.8 The main large structures remaining within the SHP site currently comprises the Boiler 17 plant and equipment which is 30m high along with its associated 104m north stack located adjacent to Edinburgh Avenue. The two cooling towers, one of which is within the Site boundary for the Proposed Development (CT8), are located to the north of Edinburgh Avenue and are approximately 49m high. Other buildings include an office, electrical switch rooms, a turbine hall, a package boiler and associated stack and a large fuel shed (see Appendix A, Figure 3A and Figure 3B).

2.2.9 A number of existing vehicular access to the SHP site will continue to be used for the Proposed Development (see Appendix A, Figure 3B), and are as follows:

1. The main HGV access point in the northwest of the Site which will have lockable gates and a barrier;

2. Access off Greenock Road, to the south of the Site;
 3. Car access off Harwich Road located immediately to the south of the package boiler in the southeast corner of the SHP site;
 4. Car access via 342 Edinburgh Avenue to the staff car park;
 5. The HGV exit to Edinburgh Avenue in the northeast of the Site. This will have an auto-activated gate; and
 6. A manually operated gate to access the Cooling Tower compound for either small lorries or pedestrians located mid-point between the two towers along Edinburgh Avenue.
- 2.2.10 There are further access/egress points, including pedestrian access, on the SHP site, however these are not relevant to the Proposed Development and hence are not discussed further.

The Surrounding Area

- 2.2.11 The Proposed Development is located within the administrative area of Slough Borough Council. The Site has a history of power generation on the Slough Trading Estate (342 Edinburgh Avenue, Slough, SL1 4TU).
- 2.2.12 The Site, which is predominantly flat and approximately 32m above ordnance datum (AOD), lies within the Thames Valley, approximately 4km north of the River Thames and is surrounded by the conurbation of Slough. Windsor is approximately 5km south of the Site and Maidenhead is approximately 7km west of the Site.
- 2.2.13 The area surrounding the Site is occupied by various industrial, warehouse and retail businesses, both large and small, typical of much of the Slough Trading Estate, which covers an area of approximately 158ha. The nearest of these commercial receptors is an industrial warehouse unit, located approximately 50m south of the SHP site boundary and a confectionary factory, which is located directly across Fairlie Road, west of the SHP site boundary.
- 2.2.14 The nearest residential properties are located approximately 180m north of the site on Bodmin Avenue, with the nearest park and green space area, Kennedy Park, situated approximately 400m northwest of the Site.

2.3 The Consented Scheme

- 2.3.1 The consented scheme (granted planning permission in June 2017) comprises the demolition of redundant plant and buildings on the Site and the construction and operation of the Slough Multifuel Facility. The consented scheme is currently under construction and, as consented, will comprise an enclosed tipping hall and fuel storage bunker, a Turbine hall, a Boiler house, a Flue Gas Treatment (FGT) plant and Ash handling facilities. Plate 2.4 illustrates a 3D model of the consented TCPA Multifuel Scheme as constructed with key features identified.
- 2.3.2 The consented scheme will also utilise a refurbished Cooling Tower 8 to the north of Edinburgh Avenue. Cooling Tower 8 and associated pumps will, under the Proposed Development, become dedicated to the Slough Multifuel scheme, whereas in the consented scheme it was assumed that this cooling tower would be a shared facility with other generating facilities on the Slough Heat and Power site.
- 2.3.3 The construction work is being undertaken by the Engineering, Procurement and Construction (EPC) contractor Hitachi Zosen Inova (HZI). Following completion of the demolition works and enabling works, the main construction work began in May 2021 and are expected to be complete in early 2024.

- 2.3.4 The consented scheme will provide a multifuel generating station that will convert Waste Derived Fuel (WDF) into low carbon electricity and heat, with a design capacity of up to 400,000 tonnes per annum of WDF, and a maximum capacity of 480,000 tonnes based on an assumption of 8000 hours per annum of operation.
- 2.3.5 The Slough Multifuel Facility has a consented generation capacity of up to 50MWe; the Proposed Development will increase the generation capacity from 50MWe to 60MWe.
- 2.3.6 In terms of key milestones in the construction of the consented Multifuel facility, the following has been completed:
- Waste bunker concrete slipform completed in August 2021;
 - First Boiler hall slab pour completed in September 2021;
 - Surface water attenuation tank installation completed October 2021;
 - Stack base construction commenced October 2021; and
 - Steelwork contractor mobilised October 2021.
- 2.3.7 Plates 2.1, 2.2 and 2.3 illustrate the current construction activity onsite. Plate 2.4 illustrates a 3D model of the consented TCPA Multifuel Scheme as constructed.



Plate 2.1 - Site Panoramic from northern boundary, Existing Consented Scheme construction (Date: October 2021)



Plate 2.2 – Site Panoramic, Existing Consented Scheme, Boiler Hall foundations (Date: October 2021)



Plate 2.3 – Consented Scheme Tipping Hall slab supports under construction (Date: October 2021)

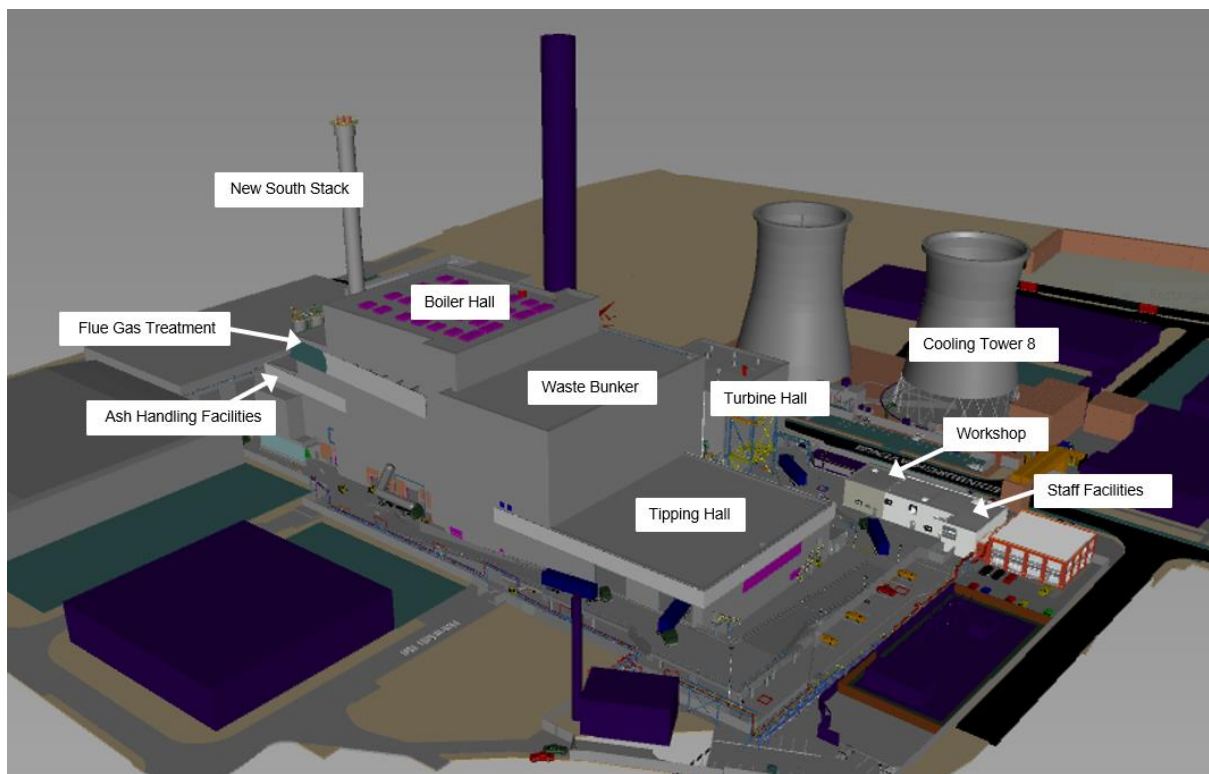


Plate 2.4 – Consented Scheme 3D Model following completion of construction

3 Description of the Proposed Development

3.1 Introduction

3.1.1 This chapter presents a description of the Proposed Development in sufficient detail to inform the approach and scope of the EIA.

3.1.2 The Proposed Development is to extend the capabilities of the consented Town and Country Planning Act (TCPA) Slough Multifuel Facility to increase the generation capacity from 50MWe to 60MWe. The consented Multifuel buildings, currently under construction, will remain as consented in the original TCPA scheme but the Proposed Development includes different technology within the facility (that can generate a higher peak output from the same fuel throughput), along with some very minor external works (namely a pipe run). These engineering works are considered to be an 'Extension' to the existing Slough Multifuel Facility and facilitate an increase in energy production. For the most part, these works will be internal and there will not be any material change to the visual appearance or size of the Plant from that which was approved by the planning permission in 2017. This chapter provides details of:

- The Proposed Development Site - The DCO Site Boundary;
- The Proposed Development Description - Overview of the Proposed Infrastructure;
- The Proposed Development Description - Electricity Export;
- The Proposed Development - Construction Programme and Activities;
- The Proposed Development - Operational Activities; and
- The Proposed Development - Decommissioning.

3.2 The Proposed Development Site

3.2.1 The Proposed Development Site is located within the Slough Heat and Power CHP site and includes the site for the Slough Multifuel Facility which was granted planning consent in June 2017 (Planning Ref. P/00987/024) and Further Development Works (for demolition of a fuel store and construction of a central site services building, installation of a water treatment plant, provision of replacement car parking and associated works) (Planning Ref. P/00987/025) and Cooling Tower 8. Construction is currently underway on the consented multifuel facility, the refurbishment of Cooling Tower 8, and the Further Development Works, which together will form the Slough Multifuel Facility.

The Proposed Development Site Boundary

3.2.2 The expected maximum area of land potentially required for the construction, operation, and maintenance of the Proposed Development, which includes land required for permanent and temporary purposes, is shown on Figure 3. It is important to note that this may be subject to change as the design and EIA progress. Critically, the consented building envelopes will not change as a result of the Proposed Development, however at this early stage a precautionary approach has been taken to include the full area subject to the consented scheme and Cooling Tower 8. The proposed land take will be refined as the Proposed Development design progresses, taking into account environmental and technical factors, and consultation responses.

3.2.3 The area of the Proposed Development Site boundary ('the red line boundary' refer to Figure 1, Figure 2 and Figure 3A) is 2.81 hectare (ha) (southern section is 2.34 ha and the northern section is 0.47 ha).

Site Access

- 3.2.4 The main construction access to the Site for the Proposed Development works will be from Edinburgh Avenue. Depending on the construction activities and sequence it may be necessary to use other HGV access and egress routes available on site. This could include the Greenock Road entrance or, on occasions, the Edinburgh Avenue HGV entrance. Construction traffic predictions will be confirmed in the ES but is not expected to be more than 20 vehicles in total over two months (<1 per day on average). For comparison the current construction traffic can be as high as 100 HGV deliveries in a 24-hour period.
- 3.2.5 Operational access and egress will be, as for the consented Slough Multifuel Facility, via Edinburgh Avenue to the north of the Site but with the removal of the egress point for the Proposed Development under the SHP North Stack which will remain part of the SHP operations.

3.3 The Proposed Development Description

Overview of the Proposed Infrastructure

- 3.3.1 The Proposed Development involves increased gross generation from 50MWe to 60MWe of the consented Slough Multifuel Facility. This will be achieved through mechanical modification of the consented Slough Multifuel Facility and provision of systems including:
- heat exchanger bundles (internal to the existing consented scheme building envelope);
 - external and internal above ground pipework and valves;
 - pipe supports (external and internal);
 - thermal insulation (internal works);
 - instrumentation (internal to the existing consented scheme building envelope);
 - cabling and containment (internal); and
 - mechanical modifications to the steam turbine inlet control system (internal works).
- 3.3.2 The increase in efficiency and generating capacity will not require any increase in the hourly throughput of WDF or in the number of approved deliveries to the facility. The consented building envelope and architecture of the consented scheme, currently under construction, will remain unchanged as detailed on Plates 3.1, 3.2 and 3.3 below.
- 3.3.3 During the construction phase, one or more temporary construction compounds will be required to facilitate storage and access to all land within the Site. Further information on construction activities is provided in Section 3.4.

Electricity Export

- 3.3.4 This Proposed Development will not require any new or additional underground or overhead cabling associated with electricity export over and above those required for the consented scheme.
- 3.3.5 Electricity generated by the Proposed Development will be exported via a consented below ground connection to Sough South substation, which is located within the wider SHP site, under permitted development rights on the SHP site. The Proposed Development would not amend the consented Slough Multifuel Facility electricity export connection.

3.4 Extension Construction Programme and Activities

Construction Programme and Staffing

- 3.4.1 Construction of the Proposed Development will commence as soon as practical subject to development consent being granted and the discharge of any relevant DCO requirements, and it is intended that it will be completed before the Multifuel facility enters operation. It is intended that it will be undertaken within and in parallel with the existing TCPA consented programme; it is not expected that there would be any change to the existing construction duration.

- 3.4.2 There will be a minor increase in construction staff of around 20 persons over a two-month installation period and around 20 HGV deliveries over the two-month period (an average <1 HGV arrival per day). This will relate to delivery of a small amount of additional pipework, four heat exchanger bundles and labour resources to install the Extension over a two-month construction period.

Construction Activities

- 3.4.3 The ES will provide further details of the Proposed Development construction activities, their anticipated duration, along with an indicative programme of each phase of the works. The sections below provide an overview of these activities.
- 3.4.4 The Works associated with increased generating capacity are predominately within the boiler house and turbine hall, with a single external pipe run between these two buildings (and not expected to be visible outside the Site) on a pipe rack to be installed as part of the consented facility currently under construction. The main differences from the consent scheme comprise the following:
- A boiler primary air preheating system will be provided to increase the thermal efficiency of the generating station. The system – which is internal to the consented building envelope - will utilise low-pressure steam extracted from the steam turbine, which will be fed through the heat exchangers raising the temperature of primary air used for combustion. Condensate will be returned from the heat exchangers to the auxiliary condensate system. The new preheating system will comprise heat exchanger bundles, pipework, valves, pipe supports, thermal insulation, instrumentation, cabling, and containment.
 - A boiler secondary air preheating system will be provided within the consented building envelope to increase the thermal efficiency of the generating station. The system will utilise low-pressure steam extracted from the steam turbine; this will be fed through the heat exchangers raising the temperature of secondary air used for combustion. Condensate will be returned from the heat exchangers to the auxiliary condensate system. The new preheating system will comprise of heat exchanger bundles, pipework, valves, pipe supports, thermal insulation, instrumentation, cabling, and containment.
 - The actuated steam turbine inlet control valve will be mechanically modified to allow the steam capacity to be increased. This increase in steam capacity will allow the megawatt capacity of the generating station to be increased.
 - The turbine control system and distributed control system software will be modified to account for the physical changes to the generating station and to allow for an increase in generating capacity.
 - The generating station will be commissioned and fully tested at an increased level of performance. Following successful testing the plant will be assigned with a new nameplate rating.
- 3.4.5 The only expected external amendment associated with the Proposed Development to the consented scheme will be the presence, 18m above ground level, of one additional pipe of similar dimensions to the three pipes in the same location forming part of the consented scheme. This is illustrated in Plates 3.1, 3.2, and 3.3, which shows the consented scheme and any changes associated with the Proposed Development in blue.

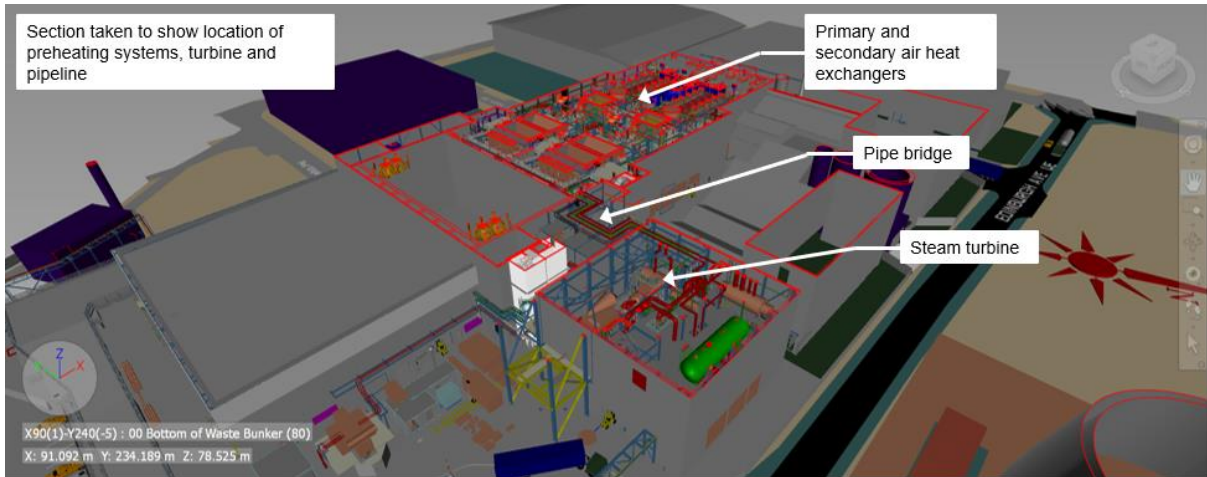


Plate 3.1 – 3D Model Section View of Consented Scheme with external pipework and pipe supports (Note – Proposed Development external pipework is coloured blue)

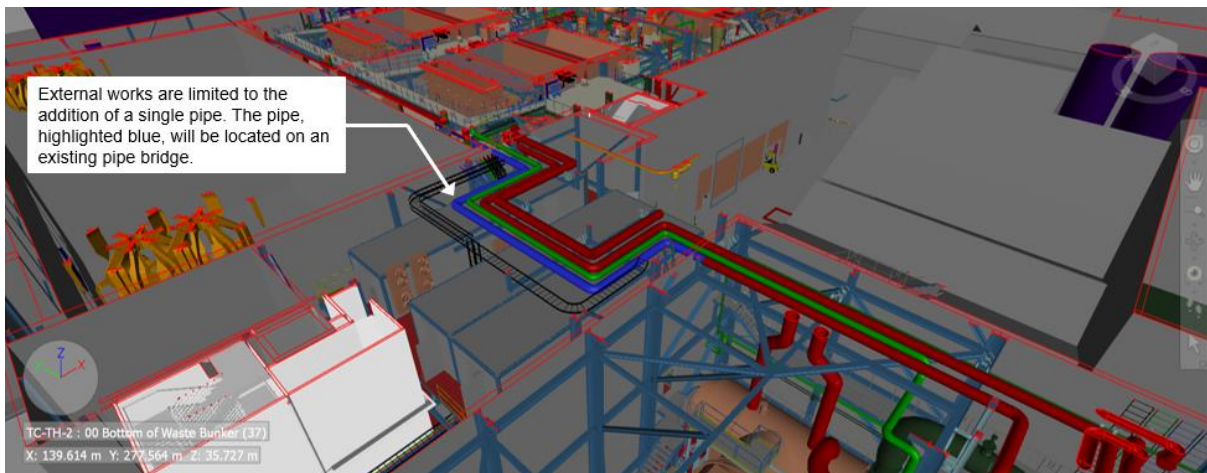


Plate 3.2 – 3D Model Close-up Aerial View of Consented Scheme with external pipework and pipe supports (Note – Proposed Development external pipework is coloured blue)

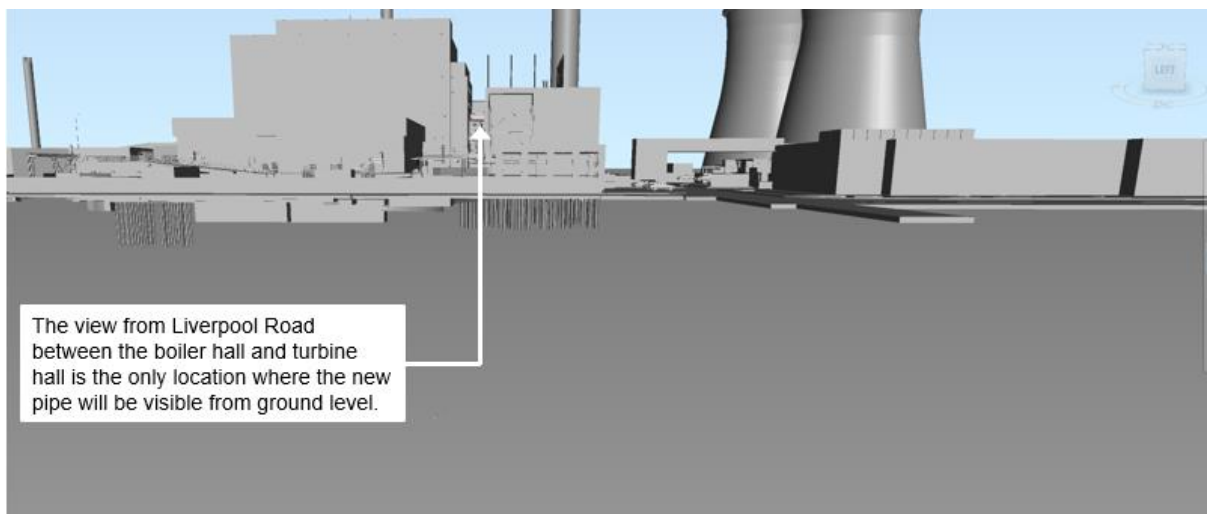


Plate 3.3 – 3D Model Aerial View (Bare Earth view from Liverpool Road of Consented Scheme with external pipework and pipe supports looking between turbine hall and boiler hall (Note – Proposed Development external pipework is coloured blue)

Construction Environmental Management

- 3.4.6 A Framework Construction Environmental Management Plan (CEMP) will accompany the DCO application for the Proposed Development, which will describe the framework of mitigation measures to be followed, to be carried forward to a detailed CEMP prior to construction. The aim of the CEMP is to reduce nuisance impacts from:
- Use of land for temporary laydown areas, accommodation, etc.;
 - Construction traffic (including parking and access requirements);
 - Changes to access and temporary road or footpath closure (if required);
 - Noise and vibration;
 - Utilities diversion;
 - Dust generation;
 - Waste generation, segregation and disposal in accordance with the waste hierarchy; and
 - Working hours and a procedure for consenting exceptions.
- 3.4.7 The detailed CEMP will be founded on the approved CEMP relating to the main construction works (consented scheme) and modified as appropriate by the appointed construction contractor for the Proposed Development. This will be produced following grant of the DCO and submitted to SBC for approval prior to the start of construction of the Proposed Development (for example, as part of a requirement attached to the DCO) and will identify the procedures to be adhered to and managed by the Principal Contractor throughout construction.
- 3.4.8 Contracts with companies involved in the construction works will incorporate environmental control, health and safety regulations, and current guidance and will ensure that construction activities are sustainable and that all contractors involved with the construction stages are committed to agreed best practice and meet all relevant environmental legislation including: Control of Pollution Act 1974 (COPA) (Ref 17), Environment Act 1995 (Ref 18), Hazardous Waste Regulations 2005 (as amended) (Ref 19) and the Waste (England and Wales) Regulations 2011 (Ref 20).
- 3.4.9 Records will be kept and updated regularly, ensuring that all waste transferred or disposed of has been correctly processed with evidence of signed Waste Transfer Notes (WTNs) that will be kept on-site for inspection whenever requested. Furthermore, all construction works will adhere to the Construction (Design and Management) Regulations 2015 (CDM) (Ref 21).

3.5 Operational Activities

- 3.5.1 The Proposed Development would utilise the same fuel type (WDF) approved for the consented Slough Multifuel Facility. The maximum hourly fuel throughput will not increase from the consented Slough Multifuel Facility. There will therefore be no change to the number of road traffic deliveries during operation relative to the consented scheme.
- 3.5.2 The additional electricity generated comes from raising the temperature of the combustion air fed into the boiler by providing pre-heaters. As the incoming air will be at a higher temperature, less fuel is required to achieve the design output. If the same amount of fuel is burned, then more steam will be produced which can be used by modifying the steam turbine inlet system to increase the output.
- 3.5.3 It is envisaged that the Proposed Development operation will be a continuous process, operating twenty-four hours per day, seven days per week with periodic offline periods for maintenance on each line. The consented scheme plus the Proposed Development is anticipated to be operational for up to 8,760 hours per year compared to the assumption made for the TCPA Slough Multifuel Facility (which was assumed to be 8,000 hours per year for some assessments).
- 3.5.4 The existing steam connection from the SHP site to the Slough Trading Estate will be used for the consented Slough Multifuel Facility to export heat and steam to offsite users. The Proposed Development will not change this and the consented TCPA Slough Multifuel Facility will continue to be able to export heat as either steam or hot water, depending on the requirements of the consumer. There will continue to be 20MW thermal energy available to export.

- 3.5.5 Cooling Tower 8 and its associated pumps will be utilised by the Proposed Development. This is the same as for the consented scheme, but with the difference that it will now be solely connected to and utilised by the Proposed Development rather than operated as shared infrastructure (to other energy generating activities on the SHP site).
- 3.5.6 The Proposed Development will not result in any change to the consented building envelope and architecture, currently under construction, for the TCPA Slough Multifuel Facility.

3.6 Decommissioning

- 3.6.1 The Proposed Development will be an Extension to the consented Slough Multifuel Facility development and is expected to have a design life of at least 30 years with the possibility of extending this to 50 years. At the end of operation, it would be expected that the plant will have some residual life remaining and an investment decision would then be made based on the market conditions prevailing at that time.
- 3.6.2 At the end of its operating life, the most likely scenario is that the plant and all equipment will be shut down and removed from the Site. Prior to removing the plant and equipment, all residues and operating chemicals would be cleaned out from the plant and disposed of in an appropriate manner. The amount of such chemicals will be restricted to the normal plant residues and any remaining operating chemicals such as hydrated lime, activated carbon, boiler water treatment chemicals or ammonia solution. The bulk of the plant and equipment is likely to have some limited residual value as scrap or recyclable materials.
- 3.6.3 Any part of the Proposed Development and wider Slough Multifuel Facility Scheme containing chemicals will be fitted with sealed bunds and integral hardstanding that would be maintained over the life of the Environmental Permit through the site preventative maintenance regime. The fuel tipping area will also be a sealed area to contain any leaks or spillages.
- 3.6.4 It is therefore considered highly unlikely that the Proposed Development will create any new areas of ground contamination. Once the plant and equipment have been removed to ground level, it is expected that the hardstanding and sealed concrete areas will be left in place. Any areas of the plant which are below ground level are likely to be backfilled to ground level to leave a levelled area.

4 Alternatives

4.1 Introduction

- 4.1.1 The ES is required to outline the reasonable alternatives that have been considered as part of the EIA process, along with the environmental and social impacts associated with these.

4.2 Alternatives Considered

- 4.2.1 The ES will include a description of the reasonable alternatives relevant to the Proposed Development that have been considered, including their specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects. A full detailed appraisal of the options considered will be presented as part of the ES, discussing the rationale for the Proposed Development.

- 4.2.2 In summary, the main reasonable alternatives are:

- **No development, retaining the TCPA consented design** - This option would not deliver increase in efficiency and the additional electricity generation capacity associated with the Proposed Development;
- **Applying for an Extension between 50-60MWe** – This option would not deliver the full efficiency gain potential together with the increase in electricity generation capacity associated with the Proposed Development;
- **Applying for 60MWe** - The chosen option/ the Proposed Development; and
- **Applying for >60MWe** – This option would generate increased HGV traffic and increased throughput of fuel, which would increase congestion and pollution, and has therefore been dismissed. A >60MWe design would require modifications to the fuel bunker and building envelope which would require an application for a full generating station (rather than an Extension) and would require demolition of the structures already built on site as part of the TCPA. There is also likely to be insufficient space onsite for this option. This option was therefore not considered further.

- 4.2.3 Alternatives for site location, design, alternative layouts and technologies is not relevant for consideration of alternatives in the ES.

- 4.2.4 Further refinement will be undertaken as the Proposed Development design progresses to determine the DCO application boundaries submitted with the DCO application.

5 Consultation

5.1 Context

- 5.1.1 Effective stakeholder engagement and consultation is intrinsic to the Planning Act 2008 and fundamental to the success of the Scheme.
- 5.1.2 The process of consultation is critical to the development of a comprehensive and balanced ES. The views of statutory and non-statutory consultees serve to focus the environmental studies and to identify specific issues that require further investigation. Consultation is an ongoing process, which enables mitigation measures to be incorporated into the project design thereby limiting adverse effects and enhancing environmental benefits.
- 5.1.3 The Proposed Development has a wide range of stakeholders (including landowners, statutory consultees, local communities and specialist interest groups) with differing interests that will require varied levels of consultation. Specific communication activities therefore need to be focussed to meet the needs of particular individuals and groups. This requires an understanding of the stakeholders and their interests in the Proposed Development.
- 5.1.4 Stakeholder engagement for the Proposed Development is based on the following principles:
- Timely and ongoing engagement to update the community on the Proposed Development to the consented Slough Multifuel Facility;
 - Seeking an appropriate level of feedback ensuring that comments received are taken into consideration;
 - Building of long-term relationships with key stakeholders throughout the different stages of the Proposed Development to help better understand their views;
 - Where possible and practicable ensuring concerns are addressed; and
 - Ensuring appropriate statutory consultation is undertaken in compliance with requirements of the Planning Act 2008, EIA Regulations and associated guidance.

5.2 DCO Consultation Requirements

- 5.2.1 The DCO process has a number of statutory requirements regarding consultation. These requirements stipulate that certain stakeholder groups and the community must be consulted as part of the pre-application process, as set out in Sections 42, 47 and 48 of the Planning Act 2008 and Regulation 13 of the EIA Regulations. Further requirements set out how the Proposed Development must be publicised, and specific documents produced, including a Statement of Community Consultation (SoCC), Preliminary Environmental Information Report (PEI Report) and a Consultation Report.

5.3 Consultation to Date

- 5.3.1 A number of meetings with statutory consultees have already taken place to provide an introduction to the proposals, including:
- The Planning Inspectorate; and
 - Project Liaison Group (includes Slough Borough Council, the Environment Agency and Thames Water).
- 5.3.2 In addition, a project website has been set up to provide up to date information on the wider Slough Multifuel Facility website (<https://www.ssethermal.com/energy-from-waste/slough-multifuel>), and information has been provided to local residents and local community groups in advance of the submission of this Scoping Report.

5.4 Scoping Consultation

- 5.4.1 The Planning Inspectorate (on behalf of the SoS) will consult on this Scoping Report under the EIA Regulations. Views from consultees will be considered and used to inform the Scoping Opinion to be issued by the Planning Inspectorate (on behalf of the SoS).
- 5.4.2 Under Regulation 10(6) of the EIA Regulations, the SoS must undertake consultation with statutory consultation bodies, including environmental bodies (such as Natural England, the Environment Agency and Historic England) and relevant planning authorities (Slough Borough Council), before adopting a Scoping Opinion.

6 Environmental Impact Assessment Methodology

6.1 Introduction

6.1.1 The ES will be based on a number of related activities, as follows:

- Establishing existing baseline conditions with the TCPA consented scheme under construction as the Proposed Development will only be possible if the consented scheme is constructed;
- Consultation with statutory and non-statutory consultees throughout the DCO pre-application process;
- Consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to EIA;
- Consideration of technical standards for the development of significance criteria;
- Review of secondary information, previous environmental studies and publicly available information and databases;
- Desk-top studies;
- Physical surveys and monitoring;
- Computer modelling (where required); and
- Expert opinion.

6.1.2 The ES will set out the process followed during the EIA including the methods used for the collection of data and for the identification and assessment of impacts. Any assumptions made will be clearly identified.

6.1.3 The EIA process is designed to be capable of, and sensitive to, changes that occur as a result of design development, including any mitigation measures that are incorporated during the EIA. It is not, however, anticipated that the Proposed Development that is the subject of the EIA and DCO application will be materially different from the Proposed Development that is the subject of this Scoping Report, and it will be within the parameters / options set out in *Chapter 3: Description of the Proposed Development*, of this Scoping Report.

6.1.4 Impacts will be considered on the basis of their magnitude, duration, and reversibility. Cumulative and combined effects will also be considered where appropriate. Significance will be evaluated on the basis of the scale of the impact and the importance or sensitivity of the receptors, in accordance with standard assessment methodologies. More information on the assessment methodology is provided in Section 6.5.

6.1.5 Where potentially significant adverse environmental effects are identified in the assessment process, measures to mitigate these effects will be put forward in the form of recommendations to be undertaken as part of the project development as far as practicable.

6.2 Baseline Assessment

6.2.1 In order to ensure the EIA is robust in considering the likely significant effects of the Proposed Development, appropriate assessment scenarios and periods/years have been identified and area discussed below.

6.2.2 The EIA will assess a set of default scenarios, and where EIA topics need to deviate from this to present a reasonable worst-case assessment this will be noted in the specific topic chapter. The assessment scenarios are proposed as:

- **Future baseline scenario** – A future date when the consented 50MWe TCPA multifuel facility is built (in 2024) and with its theoretical operation based on as built plant design;
- **Construction scenario for the Proposed Development** – The assessment of the Proposed Development Extension works, which are expected to last two months duration and will be in parallel with the construction of the consented scheme. This is anticipated to happen in Q1 2024;
- **Operational scenario with the Proposed Development** – The assessment of the incremental change associated with the Proposed Development for comparison with the Future baseline scenario in 2024, i.e., the assessment of any operational changes relative to the TCPA consented scheme (including assessing operations at 100% availability); and
- **Decommissioning scenario** – Assessment of the decommissioning of the power station at the end of its operational life.

6.2.3 The present-day baseline will not be outlined in the technical chapters, unless needed to determine the Future Baseline; this scenario adds no value to the process, as the changes associated with the Proposed Development will be assessed against the consented scheme being built and in situ.

Construction Phase Effects

6.2.4 For the assessment, these effects will be taken to be those for which the source begins and ends during the construction stage of the Proposed Development, and the effects do not endure beyond the completion of the construction phase. This covers sources of effects that might include construction traffic, noise and vibration from Proposed Development construction activities, dust generation, risk of fuel/oil spillage, and the visual intrusion of plant and machinery on-site. Some aspects of construction related effects will last for longer than others.

Operational Phase Effects

6.2.5 For the assessment, these are the effects that, although they may start during construction, are either permanent, endure for a substantial period beyond construction or decommissioning, or represent an extended cumulative effect of construction or decommissioning activity. This includes the effects of the physical presence of the energy infrastructure, and its operation (up to 100% availability), use and maintenance. Timescales associated with these enduring effects are as follows:

- Short term – endures for up to 12 months after construction or decommissioning;
- Medium term – endures for 1-5 years;
- Long term – endures for more than 5 years;
- Reversible Long-Term Effects – long-term effects, which endure throughout the lifetime of the Scheme but which cease once the Scheme has been decommissioned (operational effects will all fall into this category); and
- Permanent Effects – effects which cannot be reversed following decommissioning (e.g. where buried archaeology is permanently removed during construction).

Decommissioning Period Effects

- 6.2.6 For the assessment, these effects will be taken to be those for which the source begins and ends during the decommissioning stage, and the effects do not endure beyond the completion of the decommissioning phase. This covers sources of effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, risk of fuel/oil spillage, and the visual intrusion of plant and machinery on-site, for example. As with construction phase effects, some aspects of decommissioning will endure for longer than others.

6.3 Determining the Baseline Conditions

- 6.3.1 In order to predict the potential environmental effects of the Proposed Development, it will be necessary to consider the environmental conditions predicted to exist within the Site boundary and surrounding area, when the consented 50MWe TCPA Scheme is constructed and assuming its theoretical operation (i.e. what will happen in the absence of the Proposed Development being granted a DCO). These are known as 'future baseline conditions'.
- 6.3.2 Detailed, environmental future baseline information will be collected and the methodology for the collection process will be detailed within the ES. The future baseline information will be gathered from various sources, including:
- online/digital resources;
 - data searches, e.g. GroundSure, Historic Environment Record, etc.;
 - baseline site surveys; and
 - environmental information submitted in support of other planning applications (including discharge pre-commencement conditions) for developments in the vicinity (e.g. the consented Slough Multifuel Facility – Planning Ref. P/00987/024 and P/00987/025).
- 6.3.3 The 'future baseline' will include the 50MWe TCPA approved multifuel plant together with Cooling Tower 8 and taking into consideration the final plant designs currently under construction. In order to verify the 'future baseline' (i.e. the 50MWe TCPA plant) and assess the Proposed Development (both Construction and Operation) the background values and modelling will need to be updated from the baselines determined in 2012/2013 for the original TCPA Environmental Impact Assessment.

6.4 Embedded Measures

- 6.4.1 Measures will be identified in order to avoid, reduce and, if possible, offset significant adverse effects identified during the EIA process. Where possible, these measures will be incorporated into the form or design of the Proposed Development.
- 6.4.2 Once these measures are incorporated into the design, they are termed 'embedded measures'. Embedded measures relevant to the construction phase will be described within a Framework CEMP, and within the 'Environmental Design and Management' section of each ES technical chapter. For the operational phase, such embedded measures will be represented primarily in the design. Embedded measures are therefore either incorporated into the design from the outset or identified through the assessment process.
- 6.4.3 The ES assesses effects with embedded measures in place. Where significant adverse effects are identified after considering these embedded measures, 'additional mitigation measures' are proposed.

6.5 Effect Significance Criteria

- 6.5.1 The evaluation of the significance of an effect is important; it is the significance that determines the resources that should be deployed in avoiding or mitigating a significant adverse effect, or conversely, the actual value of a beneficial effect. The overall environmental acceptability of the Proposed Development is a matter for the SoS to determine, having taken into account, amongst other matters, the environmental information that is set out in the ES, including all likely beneficial and adverse environmental effects. Where it has not been possible to quantify effects, qualitative assessments will be carried out, based on available knowledge and professional judgment. Where uncertainty exists, this will be noted in the relevant topic chapter.
- 6.5.2 The significance of residual effects will be determined by reference to criteria for each assessment topic. Specific effect significance criteria for each technical discipline will be developed, giving due regard to the following:
- Extent and magnitude of the impact (described as high, medium, low and very low);
 - Effect duration (see Paragraph 6.5.8, and whether effects are temporary, reversible or permanent);
 - Effect nature (whether direct or indirect, reversible or irreversible, beneficial or adverse);
 - Whether the effect occurs in isolation, is cumulative or interacts with other effects;
 - Performance against any relevant environmental quality standards;
 - Sensitivity of the receptor (described as high, medium, low and very low); and
 - Compatibility with environmental policies.
- 6.5.3 The significance of residual effects will be evaluated with reference to available definitive standards, accepted criteria and legislation. For issues where definitive quality standards do not exist, significance will be based on the:
- Local, district, regional or national scale or value of the resource affected;
 - Number of receptors affected;
 - Sensitivity of these receptors; and
 - Duration of the effect.
- 6.5.4 In order to provide a consistent approach to expressing the outcomes of the various studies undertaken as part of the EIA, and thereby enable comparison between effects upon different environmental topics, the following terminology will be used in the ES to define residual effects:
- **Adverse** – detrimental or negative effects to an environmental/socio-economic resource or receptor; or
 - **Negligible** (also referred to as ‘neutral’ for some topics) – imperceptible effects to an environmental/socio-economic resource or receptor; or
 - **Beneficial** – advantageous or positive effect to an environmental/socio-economic resource or receptor.
- 6.5.5 Where adverse or beneficial effects are identified, these will be assessed against the following scale:
- **Minor** – slight, very short or highly localised effect of no significant consequence;
 - **Moderate** – limited effect (by extent, duration or magnitude) which may be considered significant; and
 - **Major** – considerable effect (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards; considered significant.
- 6.5.6 Each of the technical chapters provides the criteria, including sources and justifications, for quantifying the different categories of effect. Where possible, this will be based upon quantitative and accepted criteria (for example, noise assessment guidelines), together with the use of value judgment and expert interpretation to establish to what extent an effect is environmentally significant.
- 6.5.7 Table 6-1 illustrates an example of the classification of effects matrix.

Table 6-1 Example matrix to classify environmental effects

<i>Sensitivity or value of resource / receptor</i>	<i>Magnitude of impact</i>			
	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Very low</i>
<i>High</i>	Major	Major	Moderate	Minor
<i>Medium</i>	Major	Moderate	Minor	Negligible
<i>Low</i>	Moderate	Minor	Negligible	Negligible
<i>Very low</i>	Minor	Negligible	Negligible	Negligible

6.5.8 Following the classification of an effect, clear statements will be made within the topic chapters as to whether that effect is significant or not significant. As a general rule, major and moderate effects are considered to be significant (as shown by the shaded cells in Table 6-1, whilst minor and negligible effects are considered to be not significant. However, professional judgement will be applied, including taking account of whether the effect is permanent or temporary, its duration/frequency, whether it is reversible, and / or its likelihood of occurrence. Generic definitions for the classification of effects are shown in Table 6-2.

Table 6-2 Generic effect descriptions

<i>Effect</i>	<i>Generic description</i>
Major	These effects may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features which are unique and which, if lost, cannot be replaced or relocated.
Moderate	These effects, if adverse, are likely to be important at a local scale and on their own could have a material influence on decision making.
Minor	These effects may be raised as local issues and may be of relevance in the detailed design of the project but are unlikely to be critical in the decision-making process.
Negligible	Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.

6.5.9 Where mitigation measures are identified to eliminate, mitigate or reduce adverse impacts, these have either been incorporated into the design of the Scheme; translated into construction commitments; or operational or managerial standards / procedures. The ES will highlight 'residual' effects, which remain following the implementation of suitable mitigation measures, and classify these in accordance with the effect classification terminology given above.

6.5.10 It should be noted that some technical disciplines may utilise different criteria when undertaking assessments due to differences in industry accepted guidelines and specifications. Where this is the case, the technical topic will discuss how the assessment methodology or classification of effects differs for the general EIA methodology as described in this section and provide justification.

Assessment of Construction and Decommissioning Effects

- 6.5.11 The identification of construction and decommissioning effects will be made on the basis of existing knowledge, techniques and equipment. A 'reasonable worst-case' scenario will be used with respect to the envisaged construction methods, location (proximity to sensitive receptors), phasing, and timing of construction activities.
- 6.5.12 The assessment of construction and decommissioning effects will assume the implementation of standard good practice measures, for example the use of temporary noise barriers to reduce noise levels as appropriate and, where practicable, control of dust on haul roads, etc. The purpose of this is to focus on the scheme specific effects, rather than generic construction effects that can be easily addressed using generic best practice mitigation measures. Construction and decommissioning assumptions, including what has been assumed in terms of good practice measures, will be set out within the ES, and the Framework CEMP. The ES will identify and assess construction and decommissioning effects that are likely to remain after these mitigation measures are in place.

6.6 Interaction and Accumulation of Effects

- 6.6.1 In accordance with the EIA Regulations, 'cumulative effects' will be considered. By definition, these are effects that result from incremental changes caused by other past, present or reasonably foreseeable actions together (i.e. cumulatively) with the Proposed Development. As the Proposed Development is an 'Extension' proposed to the consented TCPA scheme, the consented scheme will not be assessed within the cumulative effects assessment, and instead considered within the 'future baseline' scenario, as the consented scheme is required for the construction of the Proposed Development.
- 6.6.2 For the cumulative impact assessment, two types of impact will be considered:
- The combined effect of individual impacts from the Proposed Development, for example noise or pollutants on a single receptor (these will be referred to as 'effect interactions'); and
 - The combined effects of several development schemes which may, on an individual basis be insignificant but, cumulatively with the Proposed Development, have a new or different likely significant effect.

Effect Interactions

- 6.6.3 There is no established EIA methodology for assessing and quantifying effect interactions that lead to combined effects on sensitive receptors, however the European Commission (EC) has produced guidelines for assessing effect interactions "*which are not intended to be formal or prescriptive, but are designed to assist EIA practitioners in developing an approach which is appropriate to a project...*" (Ref 22).
- 6.6.4 AECOM has reviewed these guidelines and has developed an approach which uses the defined residual effects of the Proposed Development to determine the potential for effect interactions that lead to combined effects.
- 6.6.5 The EIA will predict beneficial and adverse effects during construction, operation and decommissioning of the Proposed Development, which are classified as minor, moderate or major. Several effects on one receptor or receptor group could theoretically interact or combine to produce a combined significant overall effect.
- 6.6.6 An exercise which tabulates the effects on receptors or receptor groups will be undertaken to determine the potential for effect interactions and therefore any combined effects. Only adverse or beneficial residual effects classified as minor, moderate, or major will be considered in relation to potential effect interactions. Residual effects, which are classified as negligible will be excluded from the assessment of the effect interactions as, by virtue of their definition (see Table 6-2), they are considered to be imperceptible effects to an environmental / socio-economic resource or receptor.

Cumulative Effects with Other Developments

6.6.7 The Planning Inspectorate's Advice Note 17 on the assessment of cumulative effects (Ref 23) identifies a four-stage approach as follows:

Stage 1 – Establish the NSIP's ZOI and identify long list of 'other development'

6.6.8 A review of other developments will be undertaken, initially encompassing a 'zone of influence' defined by the environmental topic specialists to prepare a long list of 'other development'. At this stage, it is anticipated that based on the nature of the Proposed Development the long list will be based on up to a maximum of 1km area of search; this is based on the absence of any long distance views, any expected increase in emissions, and there being no likely significant effects (as explained in the following sections). The long list of 'other development' to be included in the assessment of cumulative effects will be reviewed and developed in consultation with the local planning authorities, statutory consultees and other relevant organisations.

6.6.9 Development will be included in the initial long-list based on the following criteria:

- development currently under construction;
- approved applications which have not yet been implemented (covering the past five years and taking account of those that received planning consent over three years ago and are still valid but have not yet been completed);
- submitted applications not yet determined;
- refused applications, subject to appeal procedures not yet determined;
- on the National Infrastructure Planning Programme of Projects;
- development identified in the relevant Development Plan (and emerging Development Plans); and
- development identified in other plans, the Slough Trading Estate Simplified Planning Zone, and programmes which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

6.6.10 Criteria will be developed and applied to filter development which may be excluded from the initial long list, having regard to the size and spatial influence of each development. These criteria will be documented and set out within the ES.

Stage 2 – Identify shortlist of 'other development' for Cumulative Effects Assessment

6.6.11 At Stage 2, any developments of a nature or scale without the potential to result in cumulative impacts will be excluded, following discussion with the local planning authorities and consideration of the likely zone of influence for each environmental topic. The justification for including or excluding developments from the long list will be provided in a matrix, modelled on the example given within Matrix 1 (Appendix 1) of the Planning Inspectorate's Advice Note 17.

Stage 3 – Information gathering

6.6.12 Information relating to other developments will be collected from the appropriate source (which may include the local planning authorities, the Planning Inspectorate or directly from the applicant / developer) and will include, but not be limited to:

- a) proposed design and location information;
- b) proposed programme of demolition, construction, operation and/or decommissioning; and
- c) environmental assessments that set out baseline data and effects arising from 'other development'.

Stage 4 – Assessment

- 6.6.13 The assessment will include a list of those developments considered to have the potential to generate a cumulative effect together with the Proposed Development, and this will be documented in a matrix, in line with Matrix 2 (Appendix 2) of the Planning Inspectorate's Advice Note 17 which includes the following:
- a) a brief description of the development;
 - b) an assessment of the cumulative effect with the Proposed Development;
 - c) proposed mitigation applicable to the Proposed Development including any apportionment; and
 - d) the likely residual cumulative effect.
- 6.6.14 The criteria for determining the significance of any cumulative effect will be based upon:
- the duration of effect, i.e. will it be temporary or permanent;
 - the extent of effect, e.g. the geographical area of an effect;
 - the type of effect, e.g. whether additive or synergistic;
 - the frequency of the effect;
 - the 'value' and resilience of the receptor affected; and
 - the likely success of mitigation.

6.7 Proposed topics to be included in the ES

- 6.7.1 The following chapters present a discussion of the likely or potential significant environmental effects associated with the Proposed Development that it is proposed will be considered as part of the EIA. The methodology and assessment criteria that will be used to assess the identified effects are also outlined.
- 6.7.2 The likely topics are set out in the following list (with the relevant chapter in this Scoping Report referenced in brackets):
- Transport and Access (Chapter 7);
 - Air Quality (Chapter 8);
 - Noise and Vibration (Chapter 9);
 - Ecology (Chapter 10); and
 - Climate Change (Chapter 11)
- 6.7.3 Sections 7 – 11 of this Scoping Report provide an outline of the proposed scope of works for the technical topics mentioned above. As part of the assessment of the Proposed Development, and in particular to be able to determine the Future baseline, there may be a need for some background surveys. This is mentioned in Chapters 7-11, where relevant.
- 6.7.4 Chapter 12 ('Other Environmental Topics') will provide a summary of those environmental topics which have been considered during the preparation of this Scoping Report, and for which standalone chapters are not anticipated to be required in the ES due to the brevity of these assessments. It is anticipated that these topics need very little text or images to demonstrate the effects are clearly not significant. Technical appendices will be provided for these topics with a short summary provided in a single chapter within the ES. These topics include:
- Flood, Drainage and Surface Water; and
 - Major Accidents or Disasters.
- 6.7.5 Chapter 13 will provide a summary of those environmental topics which can be considered to be scoped out of the ES. These topics are expected to include:
- Aviation;
 - Cultural Heritage;
 - Landscape and Visual Impact;
 - Telecommunications;

- Ground Conditions;
- Waste;
- Human Health; and
- Socio Economics.

6.7.6 Table 6-2 provides a summary of the following chapters and sections of this Scoping Report.

Table 6-2 Summary of approach to Scoping Report

Scoping Report Chapter	Subject	Future Baseline	Proposed Development Construction	Proposed Development Operation	Scope topic In/Out
7	Transport and Access	Incorporate consented scheme trips	Assess impact but not likely to be significant	No change	Scope In
8	Air Quality	Determine conditions with consented scheme using latest methods	Assess impact but not likely to be significant	Remodel atmospheric emissions to demonstrate impacts	Scope In
9	Noise & Vibration	Determine conditions with consented scheme	Assess impact but not likely to be significant	No change	Scope In
10	Ecology	Determine conditions with consented scheme	Assess impact but not likely to be significant	No change. Include BNG assessment, and HRA screening if there are air quality impacts	Scope In
11	Climate Change	Determine conditions with consented scheme using latest methods	No impact	Assess impact of incremental 10MWe which should be beneficial	Scope In but this should be a positive benefit
12 Other Environmental Topics					
	Flood Risk & Drainage & Surface Water	Determine conditions with consented scheme	No impact	No change. However FRA is mandatory for sites >1ha.	No material change to TCPA scheme, but brief assessment provided to demonstrate this. Scope In FRA.
	Major Accidents & Disasters	Determine conditions with consented scheme	No impact	No change expected.	No material change to TCPA scheme, but brief assessment provided to demonstrate this.
13 Scoped Out Topics					
	Aviation	No change	No change	No change	Scope Out
	Cultural Heritage	No change	No change	No change expected	Scope Out - if LVIA demonstrates there is no visual change
	LVIA	Determine conditions with consented scheme	No impact	No visible change	Scope out - No material change to TCPA scheme

Scoping Report Chapter	Subject	Future Baseline	Proposed Development Construction	Proposed Development Operation	Scope topic In/Out
	Telecoms	No change	No impact	No change	Scope Out
	Ground Conditions	No change	No impact	No change	Scope Out
	Waste generation	Incinerator bottom ash (IBA) recycling contract in place	No impact, small amount of construction waste that will be largely recycled	No change	Scope Out
	Human Health	No change	No Impact	No change	Scope Out - if the air quality assessment shows no change
	Socio Economics	No change	Minor benefit of c20 jobs for 2 months	No change	Scope Out

6.7.7 These topics are discussed in turn below in the following sections of this Scoping Report.

7 Transport and Access

7.1 Introduction

- 7.1.1 This section outlines the anticipated traffic and transport scope of assessment for the Proposed Development. A Transport Statement Scoping Note will also be prepared and agreed with SBC outside of this report, the purpose of which is to set out in the proposed scope specific to the Transport Statement, which will be consistent with the approach set out below.

Study Area

- 7.1.2 The proposed extent of the study area is the same as that considered for the consented Slough Multifuel Facility ES, including the following links:
- Edinburgh Avenue (west of Liverpool Road junction);
 - Edinburgh Avenue (east of Liverpool Road junction);
 - Liverpool Road;
 - Buckingham Avenue (west of Liverpool Road junction);
 - Leigh Road;
 - A355 Farnham Road (south of Buckingham Avenue junction); and
 - Buckingham Avenue (east of Liverpool Road junction).
- 7.1.3 The extent of the study area for assessment in terms of highway impact will be subject to discussion, and agreement will be sought with the local highway authority.

7.2 Planning Policy Context and Guidance

- 7.2.1 Planning policy and guidance relating to transport and pertinent to the Proposed Development comprises:

National Planning Policy

- NPS EN-1 (Ref 24), section 5.13, with particular reference to paragraphs 5.13.3, 5.13.4 and 5.13.5, which state that if a project is likely to have significant transport implications, a Transport Statement, Travel Plan and, if necessary, additional transport infrastructure should be provided to mitigate the impacts of the proposed development;
- Draft NPS EN-1 (Ref 25), paragraphs 5.14.3-5.14.5, which state that if a project is likely to have significant transport implications, the applicant's ES should include a transport assessment/statement and, where appropriate, a travel plan. It also states that the applicant should provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts; and
- NPPF, with particular reference to Paragraph 108 Part C, which states that any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

National Guidance

- Planning Practice Guidance, Travel Plans, Transport Assessments and Statements in Decision Taking (Ref 26).

Local Planning Policy

- Slough Local Development Plan Documents
- Slough Local Transport Plan 3 (LTP3) (Ref 27)

- 7.2.2 The policies set out above relate to how traffic and transport related impacts should be dealt with, in terms of identifying the level of impact as well as mitigation which might be necessary. Therefore, in accordance with the policies and guidance set out above, a Transport Statement will be prepared (scope and approach to be confirmed with the local highway authority), which identifies the impact of the Proposed Development, and what, if any, mitigation is required.

Industry Guidance

- 7.2.3 Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic (1993) (Ref 28) provides guidance on examining the environmental impacts of developments in terms of traffic and transportation.

7.3 Baseline Conditions

- 7.3.1 The traffic and transport chapter will include a summary of the future baseline on the local highway network, pedestrian and cycle infrastructure and public transport provision. At this stage there are no known changes expected to the transport network between now and the planned construction of the Proposed Development. The below is therefore considered a valid description of the future baseline.

Existing Local Highway Network

- 7.3.2 The Proposed Development is located within the SHP site, which is in turn within the Slough Trading Estate in the northwest of Slough.
- 7.3.3 The northern boundary of the SHP site and Site is formed by Edinburgh Avenue, which runs from west to east between Fairlie Road and the A355 Farnham Road and provides the main Site access/egress. Greenock Road and Harwich Road provide access/egress to the southern boundary of the Site.
- 7.3.4 To the east of the SHP site are other small industrial units and Liverpool Road is located east of this. Liverpool Road runs from Edinburgh Avenue in the north to the crossroads with Buckingham Avenue/Leigh Road in the south. Leigh Road continues south to the A4 Bath Road over a recently installed two-way rail crossing.
- 7.3.5 Beyond the southern boundary of the Site is Buckingham Avenue and this runs between Burnham Lane in the west and the A355 Farnham Road in the east.
- 7.3.6 Fairlie Road lies immediately west of the SHP site and runs from Buckingham Avenue in the south to the roundabout junction with Pevensey Road, where it becomes Chaffield, in the north. Chaffield then continues north, where a right turn can be taken on to Northborough Road, which also leads to the A355.
- 7.3.7 Edinburgh Avenue, Buckingham Avenue, Fairlie Road and Liverpool Road are all local distributor roads within the Slough Trading Estate and are wide enough to accommodate HGVs. They are all subject to a 30mph speed limit.
- 7.3.8 The A355 runs from north to south, approximately 700m east of the Site. Within the vicinity of the Site it is called Farnham Road. This road terminates at Junction 6 of the M4, approximately 3km southeast of the Site. The A355 continues north to Junction 2 of the M40 (located 9.3km north of the Site) and then on to Amersham. There are various sections of this road with a bus lane.
- 7.3.9 The A4 runs from east to west approximately 500m to the south of the Site. The road starts in Avonmouth, to the west of Bristol, and continues past Bristol, Bath, Marlborough, Reading, Maidenhead and Slough, before terminating in Central London. The A4 provides a link road onto the M4 at Junction 7, 3.5km southwest of the Site.

- 7.3.10 The M4 starts in London and travels west past Slough, Reading, Swindon, Bristol, Newport, Cardiff and Swansea. Additionally, the M40 links London to High Wycombe, Oxford, Banbury, Royal Leamington Spa and finally Birmingham. The close proximity of these key roads to the site means that the Proposed Development Site is well connected for road access.

Existing Walking Facilities

- 7.3.11 The local road network generally has good pedestrian facilities. There is a continuous network of footways all the way to the Slough rail station located 3.3km to the east of the Site via several possible routes. The bus stops on Buckingham Avenue can be easily reached on foot which provide bus access direct to either Slough or Burnham Stations. The nearest crossing point to access the bus stop on the south side of Buckingham Avenue for westbound services is located at the junction with Buckingham Avenue/Fairlie Road/Falmouth Road. This is a signalised crossing located approximately 120m west of the stops.
- 7.3.12 An average walking speed of approximately 1.4 m/s is generally assumed for pedestrians at new developments. This equates to approximately 400m in five minutes or three miles per hour. With this in mind Slough railway station could be reached in less than 40 minutes, Burnham station in less than 24 minutes and the bus stops on Buckingham Avenue could be reached in between 3 and 6.5 minutes from the Site, depending on the exit used.

Existing Cycling Facilities

- 7.3.13 Buckingham Avenue, Fairlie Road, Chaffield, Northborough Road and Dover Road all have cycle lanes or bus/cycle lanes on them. The A355 Farnham Road has a shared pedestrian/cycle path adjacent to the carriageway between the junction with Buckingham Avenue and the A4 Bath Road. The A4 Bath Road also has a shared pedestrian/cycle path adjacent to the carriageway between Dover Road to the west and the town centre in the east. A continuous cycle route is available to the Slough rail station from the Site (this is with the exception of Edinburgh Avenue).
- 7.3.14 The cycle facilities within the vicinity of the Site link into the surrounding network to provide an opportunity to promote cycling as a viable mode of transport to the Site. The Site is a little over 10 minutes cycle from the town centre and the rail station would be within a 10-minute cycle. Cycling could therefore form part of a wider journey utilising multiple modes.
- 7.3.15 It is generally considered that distances of less than 5km provide the best opportunities to replace single occupancy car journeys with cycle trips. With this in mind, the majority of Slough, Windsor, Burnham and some smaller villages are within 5km of the Site.

Existing Public Transport Facilities

- 7.3.16 The nearest bus stops are located on Buckingham Avenue, immediately south of the Site. These bus stops are located approximately 550m away from centre of the Site utilising the access point nearest to Fairlie Road on Edinburgh Avenue. Both are sheltered and have seating. The bus stops are served by routes 12 and 13, providing regular buses to Slough town centre.
- 7.3.17 Slough Railway Station is located approximately 3.2km to the east of the Site and is operated by First Great Western. The station provides a direct link to destinations including London, Windsor, Reading and Oxford.
- 7.3.18 There are three trains per hour from Slough to London Paddington on a weekday morning peak, while in the evening peak hour there are 5 return services (one of which is a fast service). There are also regular services to Reading, Oxford and Windsor and Eton Central in both the AM and PM peak weekday hours and at weekends. This offers an attractive opportunity for Slough Rail Station to be utilised as a mode of travel for part of the journey to and from the Proposed Development Site.

- 7.3.19 Burnham rail station is also a popular alternative, as it avoids local traffic in the centre of Slough. This station is located 1.9km to the west of the Site and operates services to Slough, Reading and Paddington.

7.4 Potential Effects and Mitigation

- 7.4.1 The nature of the Proposed Development is such that the only incremental impact is likely to occur during the construction phase and this will be the focus of the assessment of transport effects presented in the ES. There are anticipated to be 20 staff onsite during construction of the Proposed Development project and an expected 20 HGV deliveries over the two-month construction period (i.e. <1 HGV delivery per day on average).
- 7.4.2 The annual tonnage/ fuel throughput will not increase when the Proposed Development is operational, and therefore there will be no change in the number of HGV trips generated compared to that generated by the consented Slough Multifuel Facility (Planning Ref. P/00987/024 and P/00987/025). There will be no other changes to pedestrian, cycle or public transport conditions and therefore no impacts on transport and access. The number of staff during operation will also not change.
- 7.4.3 The potential effects as a result of the Proposed Development during the construction phase are:
- Increase in HGV movements;
 - Increase in abnormal loads;
 - Travel to and from site by construction employees; and
 - Increase in delay to vehicles, pedestrians and cyclists due to increase in HGV movements.
- 7.4.4 Further detail on proposed access to the Proposed Development will be included within the ES and the Transport Statement, which will be submitted with the DCO application.
- 7.4.5 Impacts during the construction phase will be managed through the Construction Environmental Management Plan (CEMP). This will be prepared by the contractor and submitted to SBC for approval prior to the commencement of the Proposed Development. This will be an update to the existing CEMP for the consented scheme, adapted and amended where relevant to reflect the works associated with the Proposed Development. The CEMP will set out how impacts of the Proposed Development on the local highway, pedestrian, cycle and public transport networks will be managed during construction.

7.5 Assessment Methodology

Sources of Baseline Information and Consultation

- 7.5.1 To inform the assessment of the Proposed Development, information from a number of sources will be collected. The sources which will be used are set out below:
- Traffic surveys;
 - Collision Data (local highway authority or Crashmap website); and
 - Public transport websites.
- 7.5.2 New Automatic Traffic Counts (ATCs) are proposed to establish existing peak hour and daily traffic flows on the local highway network. The extent of the ATCs will be agreed with the local highway authority, but it is considered appropriate to include the locations used for the consented Slough Multifuel Facility, as follows:
- Fairlie Road
 - Edinburgh Avenue (west of Liverpool Road junction)
 - Edinburgh Avenue (east of Liverpool Road junction)
 - Liverpool Road
 - Buckingham Avenue (west of Liverpool Road junction)
 - Farnham Road (north of Edinburgh Avenue junction)
 - Leigh Road

- Farnham Road (south of Buckingham Avenue junction)
- Buckingham Avenue (east of Liverpool Road junction)

- 7.5.3 In addition, a count of construction traffic related to the consented Slough Multifuel Facility will be undertaken, so that this traffic can be removed from the network in the future year baseline scenarios.
- 7.5.4 To determine the impact of the Proposed Development, a number of scenarios will be assessed using the information collated above. The scenarios considered appropriate for assessment are:
- Future Baseline with the consented scheme during construction (2024). The need for new survey data to determine this scenario will be discussed with SBC; and
 - The effect of the Proposed Development construction over the planned two months (2024) period, against the future baseline.
- 7.5.5 It is proposed that the operational effects are scoped out. As mentioned above, the Proposed Development will not lead to any trips once the construction phase is complete. Any trips on the transport network will be associated with the operation of the consented scheme rather than the Proposed Development.
- 7.5.6 The future year baseline will be calculated by applying TEMPRO growth factors to the traffic survey data, adjusted for local growth using NTEM traffic growth calculations. Construction of the Proposed Development is likely to run in parallel with construction of the consented Slough Multifuel Facility, and therefore to provide a worst case approach, the consented scheme construction traffic will be included in the baseline for the future year assessment of construction impacts.
- 7.5.7 The decommissioning assessment year will not be considered in the Transport Statement as it is considered too far into the future to be able to accurately predict traffic flows or junction forms. A qualitative assessment of the effects will be included in the ES. The level of traffic associated with decommissioning is anticipated to be similar to construction.

Impact Assessment Methodology

- 7.5.8 The following categories of receptors that may be sensitive to changes in traffic flows have been identified:
- Pedestrians and cyclists on the roads and footways leading to the Site;
 - Motorised users on the local highway network; and
 - Public transport facilities around the Site.
- 7.5.9 The IEMA guidelines recommend a detailed assessment for highway links where:
- Traffic flows will increase by more than 30% of the baseline (or the number of heavy goods vehicles (HGVs) will increase by more than 30%); or
 - Specific environmental problems may occur (for example, where sensitive areas are affected by traffic increases of at least 10% volume flow, unless there are significant changes in the composition of traffic. It should therefore be assumed that projected changes in traffic of less than 10% create no discernible environmental effect).
- 7.5.10 As the Site lies within Slough Trading Estate, it is not considered to be a 'sensitive area' and the lower thresholds described above are not considered to apply in this case.
- 7.5.11 Based on these guidelines and on the extent of the assessment undertaken for the consented Slough Multifuel Facility, the geographical extent of the assessment is identified as incorporating:
- The access/egress points on Edinburgh Avenue;
 - The access/egress to the south of the Site during construction;
 - The surrounding highway network including:
 - Fairlie Road;

- Edinburgh Avenue (west of Liverpool Road junction);
- Edinburgh Avenue (east of Liverpool Road junction);
- Liverpool Road;
- Buckingham Avenue (west of Liverpool Road junction);
- A355 Farnham Road (north of Edinburgh Avenue junction);
- Leigh Road;
- A355 Farnham Road (south of Buckingham Avenue junction); and
- Buckingham Avenue (east of Liverpool Road junction).

7.5.12 In accordance with the IEMA guidance for assessing the environmental impacts of road traffic, the following criteria will be considered in this assessment.

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian and cyclist amenity;
- Fear and Intimidation;
- Accidents and safety; and
- Hazardous loads.

7.5.13 The significance of effect is determined through consideration of two elements; the magnitude of the impact and the sensitivity of the receptor. The following sections outline the approach that would be used to determine these factors.

7.5.14 The overall effect will be determined by measuring the magnitude of the impact following mitigation measures (where applicable) against criteria including; the number of activities of the population affected; the type and sensitivity of the receptor; and the type of impact. Effects are defined as beneficial or adverse, with effects further defined using the following classifications:

- **Minor** – slight, very short, or highly localised impact of no significant consequence;
- **Moderate** – limited impact (by extent, duration or magnitude) which may be considered significant; and
- **Major** – considerable impact (by extent, duration or magnitude) of more than local significance, or in breach of recognised acceptability, legislation, policy or standards.

7.5.15 The IEMA guidelines state that the magnitude of each impact should be determined as the predicted deviation from the baseline conditions. This will be done for the construction phase.

7.5.16 IEMA guidelines sets out a number of criteria by which the magnitude of impact can be measured. These are outlined below. Many of the criteria do not provide specific thresholds by which such impacts can be measured, and as a result will be measured qualitatively where necessary. These are described below.

7.5.17 **Severance** is defined in the IEMA guidelines as the “*perceived division that can occur with a community when it becomes separated by a major traffic artery*”. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to quite minor traffic flows if they impeded pedestrian access to essential facilities. IEMA guidelines suggest that a 30%, 60% and 90% change in traffic flows will result in a low, medium, and high change in severance respectively.

7.5.18 **Driver Delay** will be assessed by considering changes in total traffic flows through junctions and a qualitative assessment of likely impacts on driver delay.

7.5.19 **Pedestrian Delay** is considered to be affected by the changes in volume, composition or speed of traffic, in terms of their respective impacts on the ability of pedestrians to cross roads. In general, increases in traffic levels and/or traffic speeds are likely to lead to greater increases in pedestrian delay. This will be assessed qualitatively.

- 7.5.20 **Pedestrian and Cycle Amenity** is broadly defined as “the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic”. The guidance suggests that a tentative threshold for judging the significance of changes in pedestrian and cycle amenity would be where the traffic flow is halved or doubled.
- 7.5.21 **Fear and Intimidation** is “dependent on the volume of traffic, its HGV composition, and its proximity to people or the lack of protection caused by such factors as narrow pavement widths”. The assessment of Fear & Intimidation will be made based on a 30%, 60% and 90% change in traffic flows resulting in a low, medium, and high change in fear & intimidation respectively.
- 7.5.22 An assessment of **Accidents and Safety** will be carried out by examination of road traffic collision data for the most recent five-year period available. This analysis will be included in the Transport Statement and undertaken to highlight if there are any existing safety issues on the local road network which may be exacerbated by the Proposed Development. The outcome of the assessment will be presented in the ES and a qualitative assessment of effects will be made.
- 7.5.23 With regard to **Hazardous and Dangerous Loads**, the guidance indicates that “the Statement should include a risk or catastrophe analysis to illustrate the potential for an accident to happen and the likely effect of such an event.” Analysis of the road network within the study area indicates that there are no particular features, such as a significant vertical drop immediately beyond the carriageway, which would suggest that the transfer of materials poses a particular risk beyond that which would be expected on the general highway network. It is concluded that the impacts of Hazardous and Dangerous Loads do not warrant further consideration in the preparation of the ES.
- 7.5.24 The sensitivity of links is based on a qualitative assessment of the 2021 baseline scenario, taking into consideration the importance and attractiveness of the route and the destinations served. The thresholds are defined as:
- **Very Low Sensitivity:** Rural road with no pedestrian / cycle facilities provided;
 - **Low Sensitivity:** Strategic vehicular route in a rural setting with pedestrian / cycle facilities;
 - **Medium Sensitivity:** Main vehicular route with pedestrian / cycle facilities provided in built up area; and
 - **High Sensitivity:** Lightly trafficked route provided in town centre setting.
- 7.5.25 In order to determine the effect on specific receptors, both the sensitivity of receptors and the magnitude of impact, as outlined above, are considered. Table 7-1 shows the matrix that has been used to determine the effect category. Effects which are classified as major or moderate are considered to be significant. Effects can be adverse or beneficial.

Table 7-1 Matrix for Determining Effect Category

<i>Impact Magnitude</i>	<i>Receptor Sensitivity</i>			
	<i>High</i>	<i>Medium</i>	<i>Low</i>	<i>Very Low</i>
<i>High</i>	Major	Major	Moderate Adverse	Minor
<i>Medium</i>	Major	Moderate	Minor	Neutral
<i>Low</i>	Moderate	Minor	Minor	Neutral
<i>Very Low</i>	Minor	Neutral	Neutral	Neutral

7.6 Assumptions, Limitations and Uncertainties

- 7.6.1 New traffic surveys have been proposed to determine baseline conditions on the local highway network. Travel patterns are still affected by the COVID-19 pandemic to some extent, and therefore the validity of new traffic surveys at this time needs to be agreed with the Highway Authority.
- 7.6.2 As demolition and construction of the consented scheme has already commenced, the completed stages of construction and demolition of the consented scheme will not be reassessed for this EIA.

8 Air Quality

8.1 Introduction

8.1.1 This section sets out the proposed scope and methodology for the air quality assessment of the Proposed Development. This scope has been informed by consideration of the environmental baseline conditions, along with a preliminary view of the key issues likely to be associated with the Proposed Development.

8.2 Study Area

8.2.1 The study area includes sensitive human health and ecological receptors that have been identified through desk study and consultation with SBC during the previous Environmental Statement for the consented Slough Multifuel Facility.

Sensitive Human Health Receptors

8.2.2 Human health receptors have been selected as those residential areas most likely to be affected and represent the closest residential receptors to the Proposed Development.

8.2.3 The statutory review and assessment of local air quality within the area covered by SBC resulted in the designation of five AQMAs under the Local Air Quality Management (LAQM) regime, for potential exceedances of the annual mean Air Quality Objective for nitrogen dioxide (NO₂). The nearest AQMA is located approximately 1.4km southeast of the Proposed Development along Tuns Lane, and constitutes the A355 Tuns Lane from Junction 6 of the M4 motorway, in a northerly direction to just past its junction with the A4 Bath Road, and A355 Farnham Road, known as the Three Tuns. This AQMA will be included as a receptor in the assessment.

Table 8-1 Sensitive Human Receptor Locations

<i>Name</i>	<i>Type of Receptor</i>	<i>Grid Reference</i>
Bodmin Avenue	Residential	495403, 181759
Birch Grove	Residential	495672, 181655
Farnburn Avenue	Residential	495868, 181578
Melbourne Avenue	Residential	496253, 181282
Cippenham Lane	Residential	494923, 180924
Greystoke Road	Residential	494630, 181847
Tuns Lane	AQMA	496365, 180459

Sensitive Habitat Receptors

8.2.4 The air quality study area for ecological receptors includes internationally and nationally designated habitat sites within 10km of the Proposed Development. This is based on guidance prepared by the Environment Agency for the Environmental Permitting process, as a distance within which effects associated with major generating stations may occur. There are two local nature sites (Haymill Valley and Cocksherd Wood) within 2km of the Proposed Development and three non-statutory sites (Haymill Valley, Cocksherd Wood and Boundary Copse) within 3km. These sites were scoped out of the assessment of the consented Slough Multifuel Facility as they would be downwind of the Site infrequently and would therefore experience negligible effects. Therefore, they have also been scoped out of the assessment for the Proposed Development.

8.2.5 The nearest sensitive ecological receptors are identified in Table 8-2. These receptors have been determined by desktop study; a finalised list of assessment receptors will be selected through the scoping process and consultation with key stakeholders including Environmental Health Officers at SBC.

Table 8-2 Sensitive Ecological Receptor Locations

<i>Name</i>	<i>Type of Receptor1</i>	<i>Grid Reference</i>
Burnham Beeches	SSSI, SAC	495052, 184315
Stoke Common	SSSI	497931, 184870
South Lodge Pit	SSSI	490599, 181914
Bray Pennyroyal Field	SSSI	491562, 178312
Littleworth Common	SSSI	493460, 185994
Bray Meadows	SSSI	489823, 180293
Windsor Forest and Great Park	SSSI, SAC	495519, 175402
Black Park	SSSI	500878, 184093
Cannoncourt Farm Pit	SSSI	487860, 183012
Wraysbury No. 1 Gravel Pit	SSSI	500253, 175441
Cock Marsh	SSSI	488881, 186537
Kingcup Meadows and Oldhouse Wood	SSSI	502544, 185219
Great Thrift Wood	SSSI	487346, 178447
South West London Waterbodies	Ramsar	502302, 175599
Wraysbury and Hythe End Gravel Pits	SSSI	500720, 174113
Chawridge Bourne	SSSI	489406, 174090
Bisham Woods and Chiltern Beechwoods	SSSI, SAC	486474, 185335
Old Rectory Meadows	SSSI	503056, 187358

8.3 Planning Policy Context and Guidance

8.3.1 Legislation, planning policy and guidance relating to air quality, and pertinent to the Proposed Development comprises:

Legislation

- European Ambient Air Quality Directive 2008 (2008/50/EC) (retained EU legislation) (Ref 29)
- Air Quality Standards Regulations 2010 (Ref 30);
- UK National Air Quality Strategy (Ref 31)
- Clean Air Strategy 2019 (Ref 32);
- Industrial Emissions Directive (IED) (2010/75/EU) (Ref 33); and
- Environmental Permitting (England and Wales) Regulations 2016 (as amended) (Ref 34).

National Planning Policy

- Overarching National Policy Statement for Energy (NPS EN-1);
- Draft Overarching National Policy Statement for Energy (EN-1); and
- National Planning Policy Framework.

National Guidance

- Planning Practice Guidance, Air Quality (Ref 35).

Local Planning Policy

- The Local Plan for Slough 2006-2026.

8.4 Baseline Conditions

- 8.4.1 Defra have published projected background concentrations of NO₂, PM₁₀ and PM_{2.5} (particulate matter with an effective aerodynamic diameter smaller than 10 and 2.5 micrometres respectively). Projected backgrounds within 10km of the Proposed Development are a maximum of 35.8 micrograms per cubic metres of air (µg/m³), 18.0µg/m³ and 12.7µg/m³, respectively (Ref 36).
- 8.4.2 A baseline survey is proposed as part of the assessment to obtain three months' diffusion tube measurements of NO₂, oxides of nitrogen (NO_x), ammonia (NH₃) and sulphur dioxide (SO₂) at locations to be agreed with the relevant statutory consultees. The results of this survey will be included in the PEI Report / ES and will inform the future baseline conditions in the study area, which will be derived through dispersion modelling by including the consented scheme. For other pollutants considered in the assessment, baseline data will be sourced from available data, including Defra UK-Air background maps, the Acid Gas and Aerosol Network (AGANET) for hydrogen chloride (HCl), and the Heavy Metals Monitoring Network for heavy metals.
- 8.4.3 SBC has identified five areas of concern for annual mean NO₂ concentrations due to road traffic emissions (Ref 37). The Council has declared AQMAs for these areas where NO₂ concentration exceeds the annual mean Air Quality Objective for NO₂.
- 8.4.4 Background dust deposition rates in the vicinity of the Proposed Development are likely to be composed of windblown dust from background contributions and local contributions from nearby construction sites.

8.5 Potential Effects and Mitigation

Construction Phase

Construction Dust

- 8.5.1 Although most of the works is internal, within the building envelope of the consented scheme, there will be some minimal external works. Dust impacts during the construction phase of the Proposed Development have the potential to adversely affect ambient air quality and dust deposition at sensitive receptor locations within 200m of works. Sensitive receptors within 200m of the Proposed Development include residential receptors on Bodmin Avenue and the surrounding businesses on the Trading Estate.

Construction Traffic

- 8.5.2 The construction traffic flows are likely to be the same as those assessed for the consented scheme, as the Proposed Development requires less than one additional 2-way heavy good vehicle movements per day. The magnitude of the impact from the consented scheme, compared with the Proposed Development with the consented scheme, will be the same. It can be concluded in confidence that the use of traffic management measures relevant to air quality that have proven successful for the consented scheme, would be equally effective for the Proposed Development. It is proposed to scope out further assessment of construction phase traffic emissions on local air quality.

Operational Phase

Operational Traffic

- 8.5.3 There will be no additional road traffic during operation attributed to the Proposed Development.

Stationary Combustion Emissions

- 8.5.4 Point source emissions from the Multifuel Facility emission stack could include NO₂, particulates, carbon monoxide (CO), SO₂, NH₃, volatile organic compounds (VOC), HCl, hydrogen fluoride (HF), heavy metals, cadmium, thallium, dioxins, furans and polychlorinated biphenyls (PCBs). These have the potential to affect sensitive receptors near the operational Proposed Development.
- 8.5.5 The air quality assessment for the consented scheme was based on Emission Limit Values (ELVs) that are detailed in the Industrial Emissions Directive (IED). Since this time, lower emission limits for some emitted species have been defined in the Best Available Techniques (BAT) Reference document (Ref 38) and associated BAT Conclusions for Waste Incineration plant (Ref 39) published in 2019. As such, the Proposed Development will now be required to meet these lower BAT-Associated Emission Levels (AELs), and therefore as a result, the mass emissions of some pollutant species released will have actually decreased over the consented scheme. The impact of these ELV changes will be assessed using the as built parameters for the plant and compared with the future baseline scenario with the consented scheme, which was based on a 10-year-old theoretical plant design.
- 8.5.6 As the impact of these species was considered in the Human Health Risk Assessment (HHRA) for the consented scheme and were found to be acceptable at that time, an update to the HHRA is not proposed as part of this assessment. It is therefore considered that the HHRA for the consented Slough Multifuel Facility remains valid.
- 8.5.7 The amount of material being delivered is the same as the consented scheme with the same level of odour emission as previously assessed for the consented scheme. Odour from the site can be adequately controlled with the adoption of similar good practice measures to those outlined for the consented development so that the odour concentrations would be not significant.

Potential Mitigation

- 8.5.8 Good working practice measures will be identified to minimise potential emissions of dust and control emissions from non-road mobile machinery (NRMM).
- 8.5.9 The air quality assessment will identify if there is the need for any additional site specific mitigation measures during the construction and operational phase of the Proposed Development beyond the embedded mitigation measures that will be included within the design of the Proposed Development.

8.6 Assessment Methodology

Construction Dust

- 8.6.1 The assessment of construction dust will be undertaken with reference to the following best practice guidance:
- Institute of Air Quality Management (IAQM (2014), Guidance on the assessment of dust from demolition and construction (Ref 40).
- 8.6.2 The IAQM Guidance indicates that potential significant effects from construction dust are unlikely to occur beyond 350m of the site boundary of major construction site or within 50m of the route used by construction vehicles up to 500m from the site entrance/exit for human receptors. The potential for significant effects at ecological receptors, exists up to a distance of 50m from the site boundary.
- 8.6.3 Assessment of construction dust can be considered in four distinct phases, as described in the IAQM guidance, demolition, earthworks, construction and trackout. As demolition works and earthworks have already been completed on site, this phase of construction will be scoped out of the assessment.

Multifuel Facility Stack Emissions

- 8.6.4 The assessment of the point source emissions from the multifuel facility stack will be undertaken with reference to the following best practice guidance:
- Defra and Environment Agency (2021), Air emission risk assessment for your environmental permit (Ref 41).
- 8.6.5 Although the atmospheric emissions are expected to be lower than assessed in the EIA for the consented scheme, due to more stringent emission limits, process emissions from the Proposed Development with the consented scheme will be assessed through detailed dispersion modelling using ADMS5 Version 5.2. Dispersion modelling will predict ground level concentrations arising from the emissions to atmosphere at sensitive receptors.
- 8.6.6 The assessment will consider the operational design parameters for the Proposed Development. This will include plume modelling associated with Cooling Tower 8, which is predicted using the same atmospheric dispersion modelling software (ADMS).
- 8.6.7 The Proposed Development would be regulated under the Environmental Permitting (England and Wales) Regulations 2016 (as amended) . The design of the flue gas treatment system will be fully compliant with current legislation, meeting the requirements of BAT, and achieving the required BAT-AELs. The BAT-AELs are defined in the Waste Incineration BAT Reference document and these will be applied in the air impact assessment for the Proposed Development

8.7 Assumptions, Limitations and Uncertainties

- 8.7.1 The air quality impacts of the Proposed Development will be assessed using the following assumptions:
- As demolition and construction of the consented scheme has already commenced, the completed stages of construction and demolition of the consented scheme will not be reassessed for this EIA; and
 - Operational point source modelling will use design information available for the Proposed Development and up to date information for the consented scheme.
- 8.7.2 The following are scoped into the air quality assessment:
- Construction dust;
 - Multifuel Facility Stack Emissions; and
 - Cooling Tower 8 Plume.
- 8.7.3 The following are scoped out of the air quality assessment:
- Human Health Risk Assessment (HHRA); and
 - Construction traffic emissions;
 - Operational traffic emissions; and
 - Odour assessment.

9 Noise and Vibration

9.1 Introduction

- 9.1.1 This section sets out the scope and methodology for the noise and vibration assessment of the Proposed Development.
- 9.1.2 Note that the scope of this section considers noise and vibration effects on human receptors and excludes assessment of noise and vibration on ecological or heritage receptors. In-combination effects on local ecological receptors will be considered in *Chapter 10: Ecology*.

9.2 Study Area

- 9.2.1 For the purposes of providing an assessment of likely significant noise and vibration effects the extent of the study area is governed by the nearest receptors in each direction to the Proposed Development Site and transport corridors that will be affected by changes in road traffic flows during the construction and operational phases of the development.
- 9.2.2 The study area for construction noise and vibration is defined as 300m from the Project boundary; this is the study area that was agreed during the EIA for the consented scheme. Additionally, a study area of 50m either side of construction haul routes has been defined.

9.3 Planning Policy Context and Guidance

- 9.3.1 Legislation, planning policy and guidance relating to noise and pertinent to the Proposed Development comprises:

Legislation

- Control of Pollution Act 1974; and
- Environmental Protection Act 1990; and
- The Environmental Permitting Regulations 2010

National Planning Policy

- National Planning Policy Framework 2021
- Noise Policy Statement for England 2010;
- Overarching National Policy Statement for Energy (EN-1) 2011;
- Draft Overarching National Policy Statement for Energy (EN-1) 2021; and
- National Policy Statement for Renewable Energy Infrastructure (EN-3) 2011.

National Guidance

- Planning Practice Guidance: Noise 2019

Local Planning Policy

- South Bucks Local Development Framework Core Strategy Development Plan Document Adopted February 2011;
- Slough Local Development Framework - Core Strategy 2006 – 2026 Development Plan Document (December 2008); and
- Slough Local Plan (March 2004) Saved Policies still in use December 2010

Other Guidance

- 9.3.2 Additionally, reference will be made, but not be limited, to the following:
- British Standard (BS) 5228-1 2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Part 1: Noise' (BSI, 2014a);

- BS 5228-2 2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Part 2: Vibration' (BSI, 2014b);
- International Organisation for Standardisation (ISO) 9613-2: 1996 'Attenuation of sound during propagation outdoors. Part 2: General method of calculation' (ISO, 1996);
- BS 4142: 2014 'Methods for rating and assessing industrial and commercial sound' (BSI, 2014c);
- BS 7385: 1993 'Evaluation and measurement for vibration in buildings' (BSI, 1993);
- BS 6472: 2008 'Guide to evaluation of human exposure to vibration in buildings' (BSI, 2008);
- 'Calculation of Road Traffic Noise' (Department for Transport, 1988, "CRTN"); and
- Highways Agency (2019) DMRB Volume 11 Section 3 Part 7 LA 111 (Revision 0) Noise and Vibration.

9.4 Baseline Conditions

- 9.4.1 There are not known to be any new noticeable noise sources planned in the study area between now and 2024, when the Proposed Development is planned. It is therefore expected that the present-day baseline will remain valid for the future baseline scenario.
- 9.4.2 The Site is within the existing Slough Multifuel site which is part of the Slough Trading Estate. The dominant sources of sound in the area are considered to be noise from the remaining operational plant at SHP, the Trading Estate, and from local road networks.
- 9.4.3 A noise survey was undertaken in May 2013 at the identified nearest noise sensitive residential receptors as identified in Table 9-1. Due to the age of noise data (at this stage SHP was still operating plant that has now been demolished) and likely changes to the noise environment, the noise survey will be updated to include the current construction activity on site. It is proposed that consultation with key stakeholders, including SBC, will be undertaken in order to determine specific sensitive receptors and representative locations at which noise surveys will be undertaken in order to establish the baseline noise conditions within the vicinity of the Proposed Development Site. It is proposed that the sampling locations used for the EIA for the consented scheme are revisited.

Table 9-1 Sensitive Receptor Locations

<i>Receptor</i>	<i>Location</i>
R1	Roman Way
R2	Bodmin Avenue- East
R3	Greenside
R4	Bodmin Avenue- West
R5	Scaffell Road
R6	Sandown Road
R7	Montrose Avenue
R8	Westgate Crescent
R9	Northborough Road

- 9.4.4 These receptor locations were considered to be representative of the nearest noise sensitive receptors to the Proposed Development Site in each direction. In the case of Northborough Road (Receptor 9), receptors are located at higher ground levels than the Proposed Development. Consequently, these receptors represent locations at which worst case noise effects are likely to occur.
- 9.4.5 These receptors have been determined by desktop study; a finalised list of assessment receptors will be selected through the scoping process and consultation with key stakeholders including Environmental Health Officers of SBC.

- 9.4.6 Note that, as discussed in section 9.1.2, the assessment of noise effects on ecological receptors is outside the scope of this chapter.

9.5 Potential Effects and Mitigation

Construction and decommissioning noise and vibration (temporary effects)

- 9.5.1 Potential noise and vibration effects during the construction and decommissioning phases are likely to include works activities associated with building and general site activity, plant installation, and construction-related vehicle movements within the site boundary and along access routes.
- 9.5.2 Measures to control noise as defined in Annex B of BS 5228:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites - Part 1: Noise' (Ref 42) and measures to control vibration as defined in Section 8 of BS 5228:2009+A1:2014 'Part 2: Vibration' will be adopted where reasonably practicable.
- 9.5.3 These measures represent 'Best Practicable Means' (BPM) (as defined by section 72 of the Control of Pollution Act 1974) to manage noise and vibration emissions from construction activities. Examples of BPM that may be implemented during construction works are presented below:
- Unnecessary revving of engines will be avoided, and equipment will be switched off when not in use;
 - Appropriate routing of construction traffic on public roads and along access tracks;
 - Drop heights of materials will be minimised;
 - Plant and vehicles will be sequentially started up rather than all together;
 - Plant will always be used in accordance with manufacturers' instructions. Care will be taken to site equipment away from noise-sensitive areas. Where possible, loading and unloading will also be carried out away from such areas;
 - Regular and effective maintenance by trained personnel will be undertaken to keep plant and equipment working to manufacturer's specifications; and
 - Restricting any noisy activities to daytime only.
- 9.5.4 Embedded measures relevant to the construction phase will be described within a Framework CEMP.

Operational noise (reversible long-term effects)

- 9.5.5 No major vibration sources are envisaged to be introduced as part of the Proposed Development and as such there will be no associated operational vibration effects. It is proposed that operational vibration is scoped out of any further assessment.
- 9.5.6 There will be no new noise sources as part of the Proposed Development, relative to the consented scheme. Cooling Tower 8 was not consented as part of the TCPA consented scheme because no changes were proposed to this infrastructure, but it will still be used by the consented scheme.
- 9.5.7 At this stage no specific noise mitigation measures have been included for operational plant but it is required to meet a consented scheme site boundary noise level of 60dB(A) as measured 3.6m from the nearest (to a sensitive receptor) building façade and 2m from ground level. The plant will be designed to have no tonal, impulsive or intermittent features. The Proposed Development will not introduce any new or louder noise sources.
- 9.5.8 The design of the building envelope will be sufficient to provide a minimum noise reduction of 30dB. As the plant design is progressed, the specification of plant and machinery with low noise emission and properly attenuated ventilation routes will help to minimise noise emissions. The use of enclosures, local screening, mufflers, and silencers will also be used as appropriate.

9.6 Assessment Methodology

- 9.6.1 The criteria presented in *Chapter 6: EIA Methodology*, of this Scoping Report, will be followed in assigning categories to construction and operational phase noise and vibration impacts, and determining if the effects are significant.
- 9.6.2 Baseline noise monitoring will be carried out to establish the noise environment around the Site and representative of surrounding noise sensitive receptors. Monitoring will be undertaken at selected locations representative of noise-sensitive receptors around the Site. The monitoring procedures will follow guidance from BS 7445-1:2003 'Description and environment of environmental noise – Part 1: Guide to quantities and procedures' and BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'. A combination of long-term unattended and short-term attended measurements will be used. A weather station will also be installed for the duration of the noise surveys so any periods of adverse weather conditions could be identified and omitted from noise data.
- 9.6.3 Noise levels associated with construction works will be calculated (at chosen sensitive receptors) using the data and procedures given in BS 5228. The need for prediction of vibration levels will be further considered depending upon the types of activities required. There will be no piling associated with the Proposed Development so the effects of piling will be scoped out. Noise increases at sensitive receptors due to any construction traffic on public roads will be calculated according to the methods given in CRTN.
- 9.6.4 It is not anticipated that there will be any change in operational noise and it is expected that this will be scoped out of the ES, following receipt of sound power level data to confirm this. However, should this not be clear and obvious, the operational noise impact of the Proposed Development will be predicted using computer noise modelling software, based on information on plant layout, and the operating conditions and the levels of noise generated by plant items and vehicles. The modelling software enables a detailed implementation of the proposed equipment and buildings, existing surrounding buildings and ground features. The software implements the methodology in ISO 9613-2 for the calculation of noise levels from industrial sources.
- 9.6.5 The significance of the noise impact of the Proposed Development during operation will be assessed using the method given in BS 4142 and potentially World Health Organisation (WHO) guidance (WHO, 2009). BS 4142 provides a method for rating the acceptability of increases in existing noise levels at noise-sensitive receptors affected by noise from industrial sources at proposed developments, and the WHO guidance provides information regarding assessment of sleep disturbance. Further details of the approach will be discussed and agreed as required with the EHO.
- 9.6.6 Additionally, the potential for tonal, impulsive and irregular characteristics of the noise emissions from the Proposed Development will be considered and assessed against the prevailing noise climate to the sensitive receptor.
- 9.6.7 The construction of the Proposed Development may have an impact on traffic flows on local roads around the site. The change in road traffic noise levels, at a selection of relevant receptors, will be predicted using the standard methodology outlined in the CRTN. The predictions will be based on future baseline and with-development traffic data provided as part of the proposed traffic and transport statement (see Transport and Access).
- 9.6.8 The significance of changes in road traffic noise levels will be assessed based on a range of relevant guidance including the DMRB.
- 9.6.9 Criteria for determining the significance of noise and vibration impacts on relevant noise sensitive ecological receptors, including breeding birds, will be discussed and co-ordinated with the project ecology consultants.

Assumptions, Limitations and Uncertainties

- 9.6.10 Noise effects during the decommissioning phase of the Proposed Development will be similar or less than noise effects during the construction phase. The noise assessment presented for the construction phase will therefore be considered representative (or an overestimate) of the decommissioning phase. As such a separate assessment for noise from the decommissioning phase is not proposed.
- 9.6.11 Predictions of sound levels have an associated degree of uncertainty. Modelling and measurement processes have been carried out in such a way to reduce such uncertainty; however, it is unavoidable that some degree of prediction uncertainty remains.
- 9.6.12 Construction works noise levels will be predicted following guidance from BS 5228:2009+A1:2014 which provides a realistic estimate of sound propagation from construction plant. The predictions will use representative noise levels, sourced from industry standard guidance documents such as BS 5228:2009+A1:2014, for typical items of plant that are used in such developments as advised by the Applicant.
- 9.6.13 Construction phase vibration will be scoped out to the nature of the works to install the Proposed Development. No predictions of ground-borne vibration propagation are proposed.
- 9.6.14 Predictions of operational plant and activities sound pressure levels will be undertaken following guidance to ISO 9613 'Attenuation of sound during propagation outdoors', which are based on an assumption of moderate downwind propagation, and hence could be considered as a worst-case calculation. However, the standard also indicates an estimated accuracy of ± 3 dB(A) in predicted levels.
- 9.6.15 Any measurement of existing ambient or background sound levels will be subject to a degree of uncertainty. Environmental sound levels vary between days, weeks, and throughout the year due to variations in source levels and conditions, meteorological effects on sound propagation and other factors. Hence, any measurement survey can only provide a sample of the ambient levels. Every effort will be made to ensure that measurements are undertaken in such a way as to provide a representative sample of conditions, such as avoiding periods of adverse weather conditions, and school holiday periods (which are often considered to result in atypical sound levels). However, a small degree of uncertainty will always remain in the values taken from such a measurement survey.

10 Ecology

10.1 Introduction

- 10.1.1 The ecology chapter in the ES will identify and evaluate relevant ecological features, i.e. receptors (including nature conservation designations, priority habitats and protected/notable species) within the study area. It will consider the effects that the Proposed Development is likely to have on their conservation status, inter-relationships, and contribution to local, regional and (if appropriate) national biodiversity.
- 10.1.2 Avoidance, reduction, mitigation and, if necessary, compensation measures that may be required to enable the Proposed Development to proceed will be identified, in compliance with relevant nature conservation legislation and planning policy, and that the works have been planned accordingly, to demonstrate that due consideration has been given to ecological features, including recommendations for biodiversity enhancements, where appropriate.
- 10.1.3 Updated ecological surveys are proposed for 2022, to gather detailed updated baseline ecological information to that previously collected between 2012 and 2019, which will inform the future baseline scenario. The requirement and extent of these surveys will be informed by desk study data and a Preliminary Ecological Appraisal (PEA), together with AECOM's professional judgement and local knowledge of the geographical area and range of important ecological features.

10.2 Study Area

- 10.2.1 The study area for ecological surveys includes the land within Site and appropriate buffer zones, is described in the following sections.
- 10.2.2 The boundaries and zones for the ecology study area reflect standard industry good practice and the scoping distances that statutory consultees would typically expect to be considered for identification of features external to the Proposed Development that could be affected. This is informed by published guidance and professional judgement.
- 10.2.3 The desk study has included a search for international statutory nature conservation sites (e.g. Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites) within 10km of the Site; national statutory nature conservation designations (e.g. Sites of Special Scientific Interest (SSSI)) within 5km of the Site; and non-statutory nature conservation designations within 2km. Records of protected and notable species have been identified up to 2km from the Site.

10.3 Planning Policy Context and Guidance

- 10.3.1 Legislation, planning policy and guidance relating to protected nature conservation sites, significant habitats and protected and, or, notable species pertinent to the Proposed Development is outlined below.

Legislation

- Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) (Ref 43);
- Directive 2009/147/EC on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended) (Ref 44) Birds Directive);
- Regulation (EU) 1143/2014 on the introduction and spread of invasive alien species (IAS) (Ref 45);
- The Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 46);
- The Natural Environment and Rural Communities (NERC) Act 2006 (Ref 47);
- Animal Welfare Act 2006 (Ref 48); and

- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 49).

10.3.2 The above legislation will be considered when identifying potential constraints to the Proposed Development, design options and mitigation. Compliance with the above legislation may require obtaining relevant protected species licences prior to the implementation of the Proposed Development.

National Planning Policy

10.3.3 The following NPSs which, as far as they are applicable, are considered to be important and relevant to the Proposed Development:

- Overarching NPS for Energy EN-1: Part 5 of this NPS sets out guidance on generic impacts for the Applicant's assessment and decision-making on the application. These generic impacts include Part 5.3, which includes biodiversity, and will be considered in the ES chapter (although the relevant NPSs do not require this); and

10.3.4 Draft Overarching National Policy Statement for Energy (EN-1); Part 4.5 of this draft NPS sets out assessment principles of Environmental and Biodiversity Net Gain, and how it is an obligation of NSIP proposals to seek opportunities for biodiversity net gain where possible. The National Planning Policy Framework (NPPF), with particular reference to Sections 170 to 177, states that the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible.

10.3.5 It specifies the obligations that the Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this it to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

National Guidance

- Planning Practice Guidance, Natural Environment (Ref 50) with particular reference to 'Biodiversity, geodiversity and ecosystems'.

Local Planning Policy

10.3.6 Local Planning policies that are relevant to the Proposed Development are:

- Slough Borough Council's Local Development Framework Core Strategy 2006-2026; Core Policy 9 – Natural and Built Environment;
- Slough Local Development Plan 2004; and
- Future emerging local plan for Slough 2016-36.

10.3.7 These policies identify the need for ecological surveys to inform the assessment of how biodiverse an area is and how much of an impact to biodiversity development will have on land within the Site and to areas surrounding the Site. In addition, they require the assessment to consider features of ecological interest and connectivity between habitats. The policies also identify measures to enhance biodiversity and adequately mitigate unavoidable impact on existing biodiversity.

10.3.8 With regards to enhancing and protecting biodiversity and connectivity, the policies require consideration of the impacts on biodiversity by assessing protected species and habitats that could be impacted by the Proposed Development.

Other Guidance

- 10.3.9 The Natural Environment in Berkshire Biodiversity Strategy 2014 – 2020 has been produced to conserve and enhance the habitats and species of principal importance (those on Section 41 of the NERC Act) in Berkshire. The strategy has a number of published objectives to “protect and enhance habitats and ecosystems on land”, and objectives for species and people. This includes the identification of Biodiversity Opportunity Areas (BOAs) and delivery of conservation action within these areas.

10.4 Baseline Conditions

- 10.4.1 The known or predicted ecological baseline conditions are summarised in the following sections, which will be used to determine the future baseline scenario for the assessment i.e. when the consented scheme is constructed. It is not anticipated that there would be any changes to the ecological baseline conditions between now and planned construction of the Proposed Development.

Statutory Sites

- 10.4.2 Eleven statutory sites designated for nature conservation were previously identified within the stated desk study areas (10km for international and 5km for national).
- 10.4.3 These sites are shown on Figure 4 and summarised in Table 10-1.

Table 10-1 Statutorily Designated Sites within 10km (international) and 5km (national) of the Site

<i>Site Name</i>	<i>Status</i>	<i>Description</i>	<i>Distance (km) and direction from closest point of the Site</i>
Burnham Beeches	Special Areas of Conservation (SAC),	Burnham Beeches is an example of Atlantic acidophilous beech forests in central southern England. It is an extensive area of former beech wood-pasture with many old pollards and associated beech <i>Fagus sylvatica</i> and oak <i>Quercus spp.</i>	2.9km north
Windsor Forest & Great Park	SAC	Windsor represents old acidophilous oak woods in the south-eastern part of its UK range. It has the largest number of veteran oaks in Britain (and probably in Europe), a consequence of its management as wood-pasture. It is potential international importance for its saproxylic invertebrate fauna including Violet click beetle <i>Limoniscus violaceus</i> and is also designated its beech forests.	6.0km south west
South West London Waterbodies	Special Protection Area (SPA)	Reservoirs supporting internationally important numbers of <i>Gadwall Anas strepera</i> and <i>Shoveler Anas clypeata</i> . In addition, the site supports nationally important numbers of cormorant <i>Phalacrocorax carbo</i> , great crested grebe <i>Podiceps cristatus</i> , tufted duck <i>Aythya fuligula</i> , pochard <i>Aythya ferina</i> and coot <i>Fulica atra</i> .	7.6km south west
South West London Waterbodies	Ramsar	Comprises a number of reservoirs and former gravel pits in the Thames Valley adjacent to Heathrow Airport between Windsor and Hampton Court which support internationally important numbers of Gadwall and Shoveler.	7.6km south west
Chiltern Beechwoods	SAC	The Chilterns Beechwoods represent a very extensive tract of <i>Asperulo-Fagetum</i> beech forests. The woodland is an important part of a grassland-scrub-woodland mosaic. A distinctive feature in the woodland flora is the occurrence of the rare coralroot <i>Cardamine</i>	9.7km north west

bulbifera and the site is also important for calcareous grasslands, orchids and stag beetle.

South Lodge Pit	SSSI	South Lodge Pit exposes part of the only known British example of a late Santonian-early Campanian chalk phosphorite (calcium phosphate) deposit	4.4km west
Littleworth Common	SSSI	The site is an area of formerly open heathland, which has developed through natural succession into birch-oak woodland. Littleworth Common is also one of the last recorded locations for the nationally rare starfruit <i>Damasonium alisma</i> .	4.7km north west
Bray Pennyroyal Field	SSSI	This site comprises a single field adjoining the River Thames to the south-east of Bray and represents the sole Berkshire locality for the nationally rare pennyroyal <i>Mentha pulegium</i> , a species included in Schedule 8 under the Wildlife and Countryside Act 1981 and listed in the British Red Data Book of vascular plants	4.7km south west
Burnham Beeches	National Nature Reserve (NNR)	Burnham Beeches is an area of beech and oak wood pasture with pockets of heathland and sphagnum bog, located very close to large centres of urban population.	2.9km north west
Haymill Valley	Local Nature Reserve (LNR)	This designated site covers an area of 8.67ha. It comprises an area of marshy wet woodland, reedbed, streams and open water. The site is described as a valuable haven for wildlife within Slough.	0.9km west
Cockherd Wood	LNR	This 4ha ancient woodland, , contains beech <i>Fagus sylvatica</i> woodland with a sparse shrub layer and ground flora running along the chalky northern edge.	1.4km northwest

Non-statutory Sites

10.4.4 Four non-statutory sites designated for nature conservation were previously identified within 2km of the Site. These sites have been designated as Local Wildlife Sites (LoWS) for their biodiversity value at a local level and are known to have supporting value to a wide variety of protected and ecologically important species and, or habitats. These sites are summarised in Table 10-2.

Table 10-2 Non-Statutory Designated Sites within 2km of the Site

<i>Site Name</i>	<i>Status</i>	<i>Description</i>	<i>Distance and direction from closest point of the Site</i>
Haymill Valley	Local Wildlife Site (LWS)	Wildlife trust reserve containing mixed woodland with bluebells and reedbeds	0.8km west
Bray to Eton Pits & Meadows BOA	Biodiversity Opportunity Area (BOA)	Includes a variety of sites within lowland meadow habitat including Bray Meadows SSSI, Bray Pennyroyal Field and Sutherland Grange LNR. Near Eton there are a number of meadows with remnants of lowland meadow habitat.	0.8km west
Haymill Valley	BOA	Contains chalk grassland. Extensive areas along banks throughout the area and lowland mixed deciduous woodland and beech woodland.	0.9km north west
Cocksherd Wood	LWS	Ancient woodland supporting a wide variety of flora and fauna known locally as Bluebell Wood. Key plant species are field maple, birch, hazel, hawthorn, beech, ash, holly,	1.4km northwest

honeysuckle, wild cherry, blackthorn, oak and bluebells.

Boundary Copse Woodland Trust Reserve	Woodland Trust Reserve	Wildlife trust reserve containing mixed woodland with bluebells and reedbeds	1.3km north east
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Habitats

- 10.4.5 Previous Phase 1 surveys during 2012 recorded the Site as being predominately comprised of buildings and hardstanding with minor areas of habitat recorded around the perimeters including dense scrub, street trees, tall ruderal, amenity grassland, ephemeral / short perennial and introduced shrub. Priority habitats under Section 41 of the NERC Act 2006 (Ref 51), have not been previously recorded within or adjacent to the Site
- 10.4.6 From most recent site surveys during 2019 and aerial imaginary assessment, and knowledge of the current site construction works associated with the TCPA consented scheme, buildings and hardstanding on the Site has been cleared.

Species

- 10.4.7 The desk study identified potential protected species constraints. These include:
- Peregrine falcon (known to be nesting within the wider SHP site);
 - common nesting bird species;
 - roosting bats; and
 - Invasive Non-Native Species (INNS). Not recorded to date.
- 10.4.8 Surveys between 2018 and 2019 were carried out to inform the decommissioning works and updated the previous 2012 Environmental Statement baseline as follows:
- Peregrine falcon. Confirmed as breeding within the wider SHP site (i.e. adjacent to but not within the application boundary) during both 2018 (Ref 52) and 2019 (Ref 53).
 - Common breeding birds. In combination with the 2018 peregrine surveys, a Common Birds Census survey recorded a small assemblage of 13 species. Of these species only four herring gull (*Larus argentatus*), lesser black-backed gull (*Larus fuscus*), dunnock (*Prunella modularis*) and starling (*Sturnus vulgaris*) were recorded as 'notable species' with only dunnock being recorded as breeding on site.
 - Roosting bats. Buildings were assessed as having suitability for roosting bats within the wider SHP Site and the application boundary. Emergence and re-entry surveys carried out in 2018 (Ref 54) recorded no evidence of roosting bats or bat activity confirming similar studies carried out previously for the consented scheme. These buildings have now been removed as part of the demolition work.

Additional Survey Requirements

- 10.4.9 The following surveys are proposed to update the ecological baseline and therefore determine the future baseline conditions, as follows:
- An update biological records search from Thames Valley Environmental Record Centre (TVERC) will confirm the status of local designated sites and provide updated protected species records
 - Roosting bats. Previous buildings with suitability have been removed but an update PEA survey will confirm as to whether any other buildings or trees with suitability for roosting are to be impacted.
 - Habitat Regulations Assessment (HRA, commencing with a Test of Likely Significant Effects (also dubbed HRA screening) to be produced.

10.5 Value of Ecological Resources and Receptors

10.5.1 To support focussed ecological impact assessment, there is a need to determine the scale at which the relevant ecological features identified through the desk studies and field surveys undertaken for the Proposed Development are of value. A hierarchical geographical approach will be used to assign nature conservation resource importance (or value) based upon those within the Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Coastal and Marine (Chartered Institute of Ecology and Environmental Management (CIEEM) (Ref 55) (hereafter referred to as the CIEEM guidelines) and professional judgement.

- International (i.e. European);
- National (i.e. England);
- Regional (i.e. South East England);
- County (i.e. Berkshire);
- Local (i.e. Slough);
- Site (i.e. ecological features that do not meet criteria for valuation at a Local or higher level, but that have sufficient value to merit retention or mitigation); and
- Negligible (i.e. common and widespread ecological features of such low priority that they do not require retention or mitigation at the relevant location)

10.6 Potential Effects and Mitigation

10.6.1 Biodiversity Net Gain ('BNG') is defined as "*development that leaves biodiversity in a better state than before*" and involves an approach where developers work with local governments, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation. BNG is achieved when measurable improvements for biodiversity are delivered in association with a development, through the creation of new habitats or enhancement and management of existing habitats either on-site, off-site or through a combination of on-site and off-site measures.

10.6.2 The mitigation hierarchy is fundamental to biodiversity net gain. There are four sequential steps that must be taken throughout the lifecycle of a project in order to achieve BNG:

- Avoidance - actions taken to avoid causing impacts to the environment prior to beginning development (for example, moving the development to a different location).
- Minimisation - measures taken to reduce the duration, intensity, extent and/or likelihood of the unavoidable environmental impacts caused by development (for example, adapting the development design to minimise impacts).
- Restoration or rehabilitation - actions taken to repair environmental degradation or damage following unavoidable impacts caused by development.
- Offsets - measures taken to compensate for any adverse environmental impacts caused by development which cannot be avoided, minimised and/or restored (e.g. including habitat creation to offset losses).

Habitat Regulations Assessment

10.6.3 'Regulation 63 of the Conservation of Habitats and Species Regulations (2017, as amended) states that "*A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which... is likely to have a significant effect on a European site [a Special Area of Conservation, Special Protection Area or, as a matter of Government policy, a Ramsar site] or a European offshore marine site (either alone or in combination with other plans or projects) ...must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives*".

10.6.4 The process is often dubbed Habitats Regulations Assessment. The formal assessment is made by the competent authority (the Secretary of State for a DCO) but they are entitled to require a technical report from the applicant to inform their decision. Such a report will be produced to support the DCO application. The process for Habitats Regulations Assessment relevant for DCO's is set out in Planning Inspectorate Advice Note 10.

- 10.6.5 Although not anticipated, if required then a report to inform appropriate assessment will be produced for DCO submission, and to inform the development of the report Natural England will be consulted on the scope and the assessment.

National Policy Statement

- 10.6.6 Currently, the main policy driver for assessing Nationally Significant Infrastructure Projects is the National Policy Statements (NPS). As required by the NPS EN-1, any likely significant effects on internationally, nationally and locally designated sites of ecological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity should be assessed. Appropriate application of the mitigation hierarchy including consideration of reasonable alternatives should be applied.
- 10.6.7 Collectively, the current NPS make no reference to net gain in biodiversity being a requirement of the determination process and use of biodiversity offsetting to devise compensation proposals is optional, the Draft NPS EN-1 does encourage that opportunities to 'contribute and enhance the natural environment' via BNG are implemented where possible. However, the current emerging NPPF guidance in relation to BNG may be an important and relevant matter to the determination of an application for NSIPs.

Local Planning Policy and Guidance

- 10.6.8 No direct reference to net gain in biodiversity is provided within the current local plan documents, reference is made to meeting the objectives of the Berkshire Biodiversity Strategy 2014 – 2020 which includes habitat creation and increased connectivity to Biodiversity Opportunity Areas (BOAs).

Construction and Decommissioning

- 10.6.9 There is the potential for the following construction and decommissioning impacts on important ecological features:
- Habitat loss: direct loss, fragmentation and severance of terrestrial habitats with potential to affect various species, which may occur when decommissioning the Proposed Development and consented scheme (though impacts expected to be minor at most);
 - Direct disturbance of, and harm to, animals, including the displacement of species from the proximity of the Proposed Development; and
 - Indirect impacts, such as watercourse pollution, sedimentation and dust deposition, lighting of sensitive habitats and increased human disturbance.

Operation

- 10.6.10 The operation of the Proposed Development is unlikely to result in significant effects on important ecological features. Effects could include:
- Disturbance or displacement of species during operational maintenance;
 - Lighting of sensitive habitats (such as through security lighting);
 - Indirect impacts (potential air quality impacts from stack emissions); and
 - Management and maintenance of on-site and adjacent habitats.

10.7 Assessment Methodology

- 10.7.1 The approach used for the ecological impact assessment (EclA) will be undertaken in accordance with best practice guidance as published in the CIEEM Guidelines and summarised below.

- 10.7.2 The principal steps involved in the EclA can be summarised as follows:

- Ecological features that are both present and might be affected by the Proposed Development are identified (both those likely to be present at the time works begin and

those predicted to be present at a set time in the future) through a combination of targeted desk-based study and field survey work to determine the relevant future baseline conditions;

- The importance of the identified ecological features evaluated, placing their relative biodiversity and nature conservation value into geographic context. This is then used to define the relevant ecological features that need to be considered further within the assessment process;
- The changes or perturbations predicted to result as a consequence of the Proposed Development (i.e. the potential impacts), and which could potentially affect relevant ecological features are identified and their nature described. Established good-practice, legislative requirements or other incorporated design measures to minimise or avoid impacts are also described and are taken into account;
- The likely effects (beneficial or adverse) on relevant ecological features are then assessed, and where possible quantified;
- Measures to avoid or reduce any predicted significant effects, if possible, are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines). If necessary, measures to compensate for effects on features of nature conservation importance are also included;
- Any residual effects of the Proposed Development are reported; and
- Scope for ecological enhancement is considered.

10.7.3 An ecological survey will be conducted in 2022 to verify the 2018 and 2019 survey data and be used to will confirm/identify the presence or (as the site has been cleared for the consented Multifuel scheme) the probable absence of any species and habitats.

10.7.4 The 'zone of influence' for the Proposed Development is the area over which ecological features may be affected by changes as a result of the Proposed Development and associated activities. The zone of influence will be different for each ecological receptor identified, dependent on each receptor's sensitivity to change and will be determined using the maximum extents for study areas of each identified receptor. Where necessary, these will be appropriately revised as the Proposed Development evolves.

10.7.5 The ES will include consideration of options to avoid, reduce, mitigate, or, if necessary, compensate for any identified potential significant adverse effects to the point where any residual effects are not considered to be significant. In addition, opportunities will be sought for the enhancement of biodiversity at both on and off-site locations as associated with the Proposed Development.

10.7.6 In line with Section 1.2. in the CIEEM guidelines, the terminology used within the EclA will draw a clear distinction between the terms 'impact' and 'effect'. For the purposes of this EclA these terms are defined as follows:

- **Impact** – actions resulting in changes to an ecological feature. For example, construction activities of a development removing a hedgerow; and
- **Effect** – outcome resulting from impact acting upon the conservation status or structure and function of an ecological feature. For example, the effects on a population of bats as a result of the loss of a bat roost.

10.7.7 When describing potential impacts (and where relevant the resultant effects) consideration will be given to the following characteristics likely to influence this (Sections 5.11-5.18 in the CIEEM guidelines):

- **Positive / Negative** – i.e. is the change likely to be in accordance with nature conservation objectives and policy:
- **Positive** – a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g. increasing the extent of a habitat of conservation value; or
- **Negative** – a change that reduces the quality of the environment, e.g. destruction of habitat.
- **Extent** – the spatial or geographical area or distance over which the impact/effect occurs;
- **Magnitude** – the 'size', 'amount' or 'intensity' and 'volume' of an impact - this is described on a quantitative basis where possible;

- **Duration** – the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species’ lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
- **Timing and frequency** – i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons; and
- **Reversibility** – i.e. is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

10.7.8 Cumulative effects will be assessed and are those occurring from several sources (also known as inter-relationships) and/or the combined effects of other developments in the area.

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

- **Not significant** - no effect on structure and function, or conservation status; and
- **Significant** - structure and function, or conservation status is affected.

10.7.10 Sections 5.24 to 5.28 in the CIEEM guidance states that effects should be determined as being significant when:

“an effect either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project”.

“In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution)”.

10.7.11 Using this information and judgment, it is determined whether the effects will be significant or not on the integrity (of site / ecosystems) or conservation status (of habitats / species) of each ecological feature and the impact significance is determined at the appropriate geographical scale.

10.7.12 There are a number of approaches for determining the significance of effects on ecological features. Whilst the CIEEM guidelines recommend the avoidance of the use of the matrix approach for categorisation (major, moderate and minor), in order to provide consistency of terminology, the CIEEM assessment will be translated into the classification of effects scale, as outlined in Table 10-3.

Table 10-3 Relating CIEEM assessment terms to those used in other EIA chapters

<i>Effect classification terminology used in other EIA chapters</i>	<i>Equivalent CIEEM assessment</i>
Major beneficial (positive)	1) Permanent addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Moderate beneficial (positive)	1) Temporary addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.

Minor beneficial (positive)	1) Permanent addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Negligible beneficial (positive)	1) Temporary addition of, improvement to, or restoration of a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Negligible adverse (negative)	1) Temporary/reversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Minor adverse (negative)	1) Permanent/irreversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Moderate adverse (negative)	1) Temporary/reversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.
Major adverse (negative)	1) Permanent/irreversible damage to a biodiversity resource; and 2) the extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.

10.8 Assumptions, Limitations and Uncertainties

10.8.1 The following assumptions and limitations have been noted during the scoping:

- This scoping report is based upon previous baseline reports and assessment from previous scheme iterations. While an updated desk review of publicly available sources has been conducted, confirmation of the current baseline which will determine the future baseline, is to be supplied through an updated Preliminary Ecological Appraisal.
- Limitations to the undertaking of protected species surveys were identified in the previous survey reports, and these are set out in the relevant survey reports. However, no significant limitations were identified that were considered to materially affect the data collected, or the ecological impact assessment presented in this report

11 Climate Change

11.1 Introduction

11.1.1 This chapter addresses the potential impacts on the climate of the Proposed Development and the impacts of future climate change on the resilience of the Proposed Development. In accordance with the requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and guidance from the Institute of Environmental Management and Assessment (IEMA) for climate change mitigation and adaptation (Ref 56) has been applied. This chapter addresses three separate aspects:

- **Lifecycle greenhouse gas (GHG) impact assessment** – the potential effects on the **climate** from GHG emissions arising from the Proposed Development, including how the Proposed Development would affect the ability of the government to meet its carbon reduction targets;
- **In-combination climate change impacts (ICCI) assessment** – the in-combination effects of a changing climate and the Proposed Development on receptors in the surrounding environment; and
- **Climate change resilience (CCR) review** – the resilience of the Proposed Development to projections for climate change, including how the Proposed Development design would be adapted to take account for the projected impacts of climate change.

11.2 Study Area

11.2.1 The study area is global for the GHG assessment, and therefore it is more appropriate to define the assessment parameters, which include:

- All direct GHG emissions arising as a result of construction, maintenance and operational activity associated with the Proposed Development within the Site.
- Embodied carbon in materials used for construction and maintenance as a result of raw material extraction, processing, manufacture and transportation.

11.2.2 The study area for the resilience assessment will be:

- The area of temporary and completed works within the project boundary.

11.3 Planning Policy Context and Guidance

11.3.1 Legislation, planning policy and guidance relating to climate change, and pertinent to the Proposed Development comprises:

International

Kyoto Protocol

11.3.2 An international agreement linked to the United Nations Framework Convention on Climate Change (UNFCCC) (Ref 57), which commits its Parties by setting internationally binding emission reduction targets. Under Article 4 of the Kyoto Protocol, the EU created an Effort Sharing Regulation that requires the setting of individual binding GHG emission reduction targets for each of its Member States. The current Effort Sharing Decision (ESD) commits the UK to a 37% reduction in GHG emissions for the period 2021 to 2030 (Regulation (EU) 2018/842, 2018).

Paris Agreement

- 11.3.3 At the Conference of the Parties (CoP) 21 in 2015, an agreement (the “Paris Agreement”) was reached under the UNFCCC and came into force in November 2016 (Ref 58). It pledges long-term temperature goals to keep the increase in global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the increase to 1.5°C. Parties to the agreement also aim to achieve a balance between anthropogenic emissions by sources and removals by sinks of Greenhouse Gases’ (GHGs) in the second half of the century.

Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment

- 11.3.4 This Guidance aims to help EU Member States improve the way in which climate change and biodiversity are integrated in Environmental Impact Assessments (EIA) undertaken across the EU (Ref 59). In spite of the fact that the UK is no longer a Member State of the EU, this guidance is still considered relevant in the context of EIAs undertaken in respect of developments in the UK.

EC Non-paper Guidelines for Project Managers: Making Vulnerable Investments Climate Resilient

- 11.3.5 These Guidelines aim to help developers of physical assets and infrastructure incorporate resilience to current climate variability and future climate change within their projects (Ref 60). Similarly, as above, this guidance is still considered relevant in the context of EIAs undertaken in respect of developments in the UK.

National

- 11.3.6 The national planning policies identify the requirement for consideration of climate change resilience. Climate projections should be analysed, and appropriate climate change adaptation measures considered throughout the design process. Specific climate change risks identified within these policies include flooding, drought, coastal change, rising temperatures and associated damage to property and people.

Climate Change Act 2008/Climate Change Act (2050 Target Amendment) Order 2019

- 11.3.7 The Climate Change Act 2008 originally set a legally binding target for the UK to reduce its greenhouse gas emissions from 1990 levels by at least 80% by 2050. This target is supported by a system of legally binding five-year ‘carbon budgets’ and an independent body to monitor progress, the Committee on Climate Change. The UK carbon budgets restrict the amount of GHG emissions the UK can legally emit in a defined five-year period.
- 11.3.8 The Act was amended in 2019 to revise the existing 80% reduction target and legislate for a net zero emissions by 2050 (Ref 61).
- 11.3.9 In 2020, the 6th carbon budget was published by the Committee on Climate Change for consideration by Government and is the first budget to reflect the amended trajectory to net zero by 2050.

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

- 11.3.10 The 2017 Regulations state that an EIA (where relevant) must include an assessment of the impact of a project on climate change (mitigation assessment) and information on the vulnerability of the project to climate change.

UK Nationally Determined Contribution

- 11.3.11 Under Article 4 of the Paris Agreement, parties are required to communicate their intended domestic GHG mitigation targets. In 2020, the UK communicated its new Nationally Determined Contribution to the UNFCCC. Within this, the UK has committed to reducing GHG emissions by at least 68% by 2030 compared to 1990 levels (Ref 62).

Overarching National Policy Statement for Energy (EN-1)

11.3.12 Published by the Department of Energy and Climate Change (Ref 63), this describes the national policy for energy infrastructure in relation to climate impacts and adaptation; adverse effects and benefits; in relation to the EU Directive and ES requirements; in relation to adaptation measures in response to climate projections; in relation to climate projections, flood risk and the importance of relevant mitigation.

Draft Overarching National Policy Statement for Energy (EN-1);

11.3.13 Released in September 2021 for consultation, Part 4.7 considers combined heat and power, and details that using less fuel to generate the same amount of heat and power reduces emissions, in particular CO₂. The Government is committed to the reduction of CO₂ emissions.

National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)

11.3.14 Published by the Department of Energy and Climate Change (Ref 64), this describes the need for all new fossil fuel electricity generating plants to assess the viability for supporting carbon capture and storage technologies.

The National Planning Policy Framework

11.3.15 The revised National Planning Policy Framework (NPPF) (Ref 10) sets out the Government's planning policies for England and how these are expected to be applied.

11.3.16 Policies of relevance to climate change and sustainability assessment as presented herein include those achieving sustainable development and meeting the challenge of moving to a low carbon economy, climate change, flooding and coastal change.

11.3.17 This Framework states that the planning systems should support this transition by supporting low carbon energy and associated infrastructure.

National Planning Policy Guidance on Climate Change

11.3.18 Guidance published by the Ministry of Housing, Communities and Local Government (Ref 65), this describes how to identify suitable mitigation and climate adaptation measures to incorporate into the planning process. Stating *"effective spatial planning is an important part of a successful response to climate change as it can influence the emission of greenhouse gases... Planning can also help increase resilience to climate change impact through the location, mix and design of development."*

Local Strategies and Plans

11.3.19 Local strategies and plans identify the need to consider and, where appropriate, mitigate GHG emissions associated with new development. New development should aim for reduced or zero carbon development by incorporating renewable or low carbon energy sources and maximising energy efficiency where practicable and should build in resilience to projected climate change impacts.

Slough's Climate Change Strategy and Action Plan (Ref 66)

11.3.20 The council has published proposals on how to eliminate the borough's contribution to climate change and how to achieve it over the next 20 years. The plans are to tackle five key areas including what the council and other stakeholders in the borough can do and focuses on the following:

- reducing emissions from our estate and operations
- reducing energy consumption and emissions by promoting energy efficiency measures, sustainable construction, renewable energy sources, and behaviour change
- reducing emissions from transport by promoting sustainable transport, reducing car travel and traffic congestion, and encouraging behaviour change

- reducing consumption of resources, increasing recycling and reducing waste
- supporting council services, residents and businesses to adapt to the impacts of climate change

[Slough's Climate Change Strategy Vision \(Ref 67\)](#)

11.3.21 The council has set a target of borough-wide carbon neutrality by 2040, with an ambitious stretch target of 2030. This target complies with the UK's national target of net zero emissions by 2050 and a reduction of 78% of emissions by 2035 relative to 1990.

11.4 Baseline Conditions

GHG Impact Assessment

11.4.1 The baseline for the assessment of the impact of the project on climate is a 'business as usual' scenario based on the consented 50 MWe TCPA multifuel facility being built (in 2024) and with its theoretical operation for 8760 hours per annum based on as built plant design.

11.4.2 It is not expected that baseline conditions would change between now and the planned construction of the Proposed Development, and therefore the baseline conditions are also applicable to the future baseline.

Climate Change Resilient Assessment

11.4.3 The current baseline for the CCR assessment is based on historic climate data obtained from the Met Office (Ref 68) recorded by the closest meteorological station to the Proposed Development (Heathrow, 7 miles from Slough) for the period 1981-2010. This data is listed in Table 11.1

Table 11-1 Historic Climate Data 1981-2010

<i>Climatic Variable</i>	<i>Month</i>	<i>Value</i>
Average annual maximum daily temperature (°C)	-	15.2
Warmest month on average (°C)	July	23.5
Coldest month on average (°C)	February	2.1
Mean annual rainfall levels (mm)	-	601.7
Wettest month on average (mm)	October	68.5
Driest month on average (mm)	February	40.9

11.4.4 The Met Office historic 10-year averages for the 'England Southeast and Central South' region identify gradual warming (although not uniformly so) between 1969 and 2018, with increased rainfall also. Information on mean maximum annual temperatures (°C) and mean annual rainfall (mm) is summarised in Table 11-2.

Table 11-2 Historic 10-year Averages for Temperature and Rainfall for the England Southeast and Central South Region

<i>Climate Period</i>	<i>Climate Variable</i>	
	<i>Mean maximum annual temperatures (°C)</i>	<i>Mean annual rainfall (mm)</i>
1969-1978	13.731	731.91
1979-1988	13.481	777.26
1989-1998	14.434	745.95
1999-2008	14.84	830.05

<i>Climate Period</i>	<i>Climate Variable</i>	
	<i>Mean maximum annual temperatures (°C)</i>	<i>Mean annual rainfall (mm)</i>
2009-2018	14.794	799.27

11.4.5 The future baseline for the vulnerability assessment is based on future UKCP18 data detailed in Table 11-3 and Table 11-4.

11.4.6 As the design life of the Proposed Development is expected to be 30 years with the possibility of extending to a 50 year assessment timeframe, the vulnerability assessment has considered a scenario that reflects a high level of greenhouse gas emissions at the 10%, 50% and 90% probability levels up to the 2070s' time period and to assess the impact of climate change over the whole lifetime of the Proposed Development as possible.

11.4.7 For the purpose of the assessment, UKCP18 probabilistic projections for pre-defined 20-year periods for the following average climate variables have been obtained and will be further analysed:

- Mean annual temperature;
- Mean summer temperature;
- Mean winter temperature;
- Maximum summer temperature;
- Minimum winter temperature;
- Mean annual precipitation;
- Mean summer precipitation; and
- Mean winter precipitation.

11.4.8 Projected temperature and precipitation variables are presented in Table 11-3 and Table 11-4, respectively. UKCP18 probabilistic projections have been analysed for the 25 km grid square in which the proposed development is located. These figures are expressed as temperature/precipitation anomalies in relation to the 1981-2000 baseline.

11.4.9 UKCP18 uses a range of possible scenarios, classified as Representative Concentration Pathways (RCPs), to inform differing future emission trends. These RCPs "... specify the concentrations of greenhouse gases that will result in total radiative forcing increasing by a target amount by 2100, relative to preindustrial levels." RCP8.5 has been used for the purposes of this assessment as a worst-case scenario.

11.4.10 The vulnerability assessment will use a project life span of 30-50 years in line with the baseline scenarios and guidance from The Carbon Budgets Order (Ref 69), which set five yearly carbon budgets until 2032 currently.

Table 11-3 Projected Changes in Temperature Variables (°C), 50% Probability (10% and 90% probability in parenthesis)

<i>Climate Variable</i>	<i>Time Period</i>	
	<i>2020-2049</i>	<i>2060-2089</i>
Mean annual air temperature anomaly at 1.5 m (°C)	+1.0 (+0.4 to +1.8)	+4 (+1.6 to +6.7)
Mean summer air temperature anomaly at 1.5 m (°C)	+1.4 (+0.5 to +2.3)	+3.1 (+1.2 to +5.1)
Mean winter air temperature anomaly at 1.5 m (°C)	+0.9 (-0.09 to +1.9)	+2.5 (+0.89 to +4.3)
Maximum summer air temperature anomaly at 1.5 m (°C)	+1.6 (+0.4 to +2.8)	+4.6 (+1.6 to +7.85)
Minimum winter air temperature anomaly at 1.5 m (°C)	+0.9 (-0.15 to +1.97)	+2.5 (+0.76 to +4.58)

Table 11-4 Projected Changes in Precipitation Variables (%), 50% Probability (10% and 90% probability in parenthesis)

Climate Variable

	2020-2049	2060-2089
Annual precipitation rate anomaly (%)	+0.5 (-3.45 to +4.7)	-1 (-6.2 to +4.2)
Summer precipitation rate anomaly (%)	-10 (-29 to +8)	-30 (-59 to -0.18)
Winter precipitation rate anomaly (%)	+7 (-4.5 to +18)	+17 (-2.1 to +38.8)

11.5 Potential Effects and Mitigation

11.5.1 For the purposes of this assessment, it has been considered that any increase in GHG emissions compared to the baseline has the potential to have an impact, due to the high sensitivity of the receptor (global climate) to increases in GHG emissions. This is in line with the IEMA guidance (Ref 70), which states that all GHG emissions have the potential to be significant. The application of the standard EIA significance criteria is not considered to be appropriate for climate change mitigation assessments. GHG impacts will be put into context in terms of their impact on the UK's five-year carbon budgets, including sub-sectoral budgets for energy generation, which set legally binding targets for GHG emissions.

11.5.2 The consented scheme resulted in a net positive impact on GHG emissions compared with landfilling the waste. The Proposed Development will not consume more waste fuel but through the Extension works will be able to generate more electricity generation. It is therefore expected that this assessment will demonstrate a small beneficial impact relative to the consented scheme. However, it has been deemed prudent to carry out the assessment to demonstrate this.

GHG Impact Assessment

11.5.3 The key anticipated GHG emission sources during the construction and operation phase are set out in Table 11-5. This approach is consistent with the principles set out in the BS EN 15804 (Ref 71), PAS 2080 (Ref 72) and IEMA guidance. The GHG assessment will consider the impact of the proposed construction and operation of the extension works, against the baseline scenario.

Table 11-5 Potential sources of GHG emissions

<i>Lifecycle stage</i>	<i>Activity</i>	<i>Primary emission sources</i>
Product Stage	Use of products and/or materials required to build the proposed extension works	Embodied GHG emissions within the construction materials
Construction process stage	On-site construction activity including emissions from construction compounds.	GHG emissions from grid electricity use during construction. GHG emissions from fuel consumed by construction vehicles and plant use.
	Water Use	GHG emissions from the provision and treatment of water.
	Travel of construction workers	GHG emissions arising from the fuel use for vehicles transporting workers to the construction site.

<i>Lifecycle stage</i>	<i>Activity</i>	<i>Primary emission sources</i>
	Disposal of waste materials generated by the construction process.	Emissions arising from the treatment of waste. Emissions arising from the transportation of the waste to the place of treatment.
Operation stage	Operation and maintenance of the Proposed Development	Emissions arising from fuel consumed by maintenance vehicles and plant. Residue recycling. Embodied GHG emissions within the materials used for maintenance. Grid electricity use during operation of the development (lighting/signs)
Decommissioning stage	On-site decommissioning activity. Worker travel	Energy (electricity, fuel, etc.) consumption from plant and vehicles, generators on site, and workers commuting. GHG emissions from fuel consumption for transportation of workers
	Transportation and disposal of waste materials.	GHG emissions from energy use and from fuel consumption for transportation of waste

11.5.4 Additional GHG emissions as a result of the Proposed Development are not anticipated to be material in the context of the overall construction and operation of the consented 50MWe TCPA multifuel facility. In fact, carbon intensity as a result of the extension works is likely to decrease. A GHG assessment will be undertaken to confirm this position.

11.5.5 The GHG emissions offset through the production of electricity compared to grid average emissions during the operational phase will be accounted for within the GHG emissions calculations. Emissions from waste being diverted from landfill will also be considered, along with residue recycling, metal extraction and mineral replacement.

11.5.6 A Construction Environmental Management Plan (CEMP) will be prepared and implemented by the selected Principal Contractor to include a range of best practice construction measures, such as:

- Specification of alternative materials with lower embodied GHG emissions; and
- Low carbon design specifications such as energy-efficient lighting and durable construction materials to reduce maintenance and replacement cycles.

11.5.7 The final selection of any mitigation measures, if required, will be detailed as part of the lifecycle GHG impact assessment in the ES. This may include GHG emission mitigation measures concerning construction, operation and decommissioning of the Proposed Development.

In-combination climate change impact assessment

11.5.8 In-combination climate impact assessment identifies how the resilience of various receptors in the surrounding environment is affected by a combination of future climate conditions and the Proposed Development. The climate parameters relevant to the Proposed Development are detailed in Table 11-6 below together with the rationale for scoping.

Table 11-6 Climate parameters for the in-combination climate change impact of the Proposed Development

<i>Parameter</i>	<i>Scoped In/ Out</i>	<i>Rationale for Scoping Conclusion</i>
Temperature change	Out	While impacts are expected as a result of projected temperature increases, these temperature increases in combination with the Proposed Development are not expected to have a significant impact upon receptors identified by other environmental disciplines.
Sea level rise	Out	The Proposed Development is not located in an area that is susceptible to sea level rise.

<i>Parameter</i>	<i>Scoped In/ Out</i>	<i>Rationale for Scoping Conclusion</i>
Precipitation change (frequency and magnitude of precipitation events and droughts)	Out	Climate change may lead to an increase in substantial precipitation events that could lead to flash flooding or changes to groundwater levels. However, no significant impacts on surface water or groundwater levels are expected as a result of precipitation changes, in combination with the Proposed Development, as the flow of precipitation to ground will not be significantly hindered. The Proposed Development, in combination with projected changes in precipitation, is also not expected to have a significant impact upon receptors identified by other environmental disciplines.
Wind	Out	The Proposed Development, in combination with projected changes in wind patterns, is not expected to have a significant impact upon receptors identified by other environmental disciplines.

Climate change resilience review

11.5.9 The climate change resilience review will qualitatively assess the Proposed Development's resilience to climate change. This will be completed in liaison with the project design team and the other EIA technical disciplines by considering the climate projections for the geographical location and timeframe of the Proposed Development.

11.5.10 Climate parameters relevant to the climate change resilience review are detailed in Table 11-7 below.

Table 11-7 Parameters scoped into the Climate Change Resilience Review

<i>Parameter</i>	<i>Scoped In/ Out</i>	<i>Rationale for Scoping Conclusion</i>
Extreme weather events	In	The Proposed Development may be vulnerable to extreme weather events such as storm damage to structures and assets.
Increased average temperatures and incidence of heatwaves	In	Extremes in temperatures may result in heat stress of materials and structures.
Increased frequency of heavy precipitation events	In	The Proposed Development may be vulnerable to changes in precipitation, for example, land subsidence and damage to structures and drainage systems during periods of heavy rainfall.
Increase in strong wind events	In	The Proposed Development may be vulnerable to changing wind patterns, for example, high winds and falling trees could damage structures and assets.
Sea level rise	Out	The Proposed Development is not located in an area that is susceptible to sea level rise.

11.5.11 Based on the above, the vulnerability assessment is proposed to be scoped in to the EIA. The design of the proposed development will be assessed to understand how potential risks arising from future climate change such as an increase in the frequency and severity of precipitation and increased temperatures may impact the proposed development's operation.

11.5.12 A statement will be provided within the ES to describe how the Proposed Development will be adapted to improve its resilience to future climate conditions.

11.6 Assessment Methodology

11.6.1 The assessment will evaluate both the impact of the Proposed Development on the climate and the resilience of the Proposed Development to cope with future climate change based on available data.

11.6.2 GHG emissions arising from construction activities, along with those embedded in materials used to build the Proposed Development will be qualitatively considered for their impact against the UK achieving carbon budget targets.

11.6.3 The design of the Proposed Development will be qualitatively assessed to understand how potential risks arising from future climate change such as an increase in the frequency and severity of precipitation and increased heat may impact the Proposed Development's operation.

GHG impact assessment

11.6.4 In order to quantify the magnitude of emissions, GHG-emitting activities need to be identified and emissions quantified. The key anticipated GHG emission sources during Proposed Development construction and operation phase are set out in Table 11-5. This approach is consistent with the principles set out in IEMA guidance, BS EN 15804 and PAS 2080. The approach will follow Defra methodology for calculating greenhouse gas emissions based on the document Energy recovery for residual waste. A carbon-based modelling approach (February 2014).

11.6.5 GHG emissions will be assessed using a calculation-based methodology as per the below equation:

$$\text{Activity data} \times \text{GHG emissions factor} = \text{GHG emissions value.}$$

11.6.6 When relevant activity data is available, Defra (Ref 73) emissions factors and embodied carbon data from the Inventory of Carbon and Energy (ICE) will be used as source data for calculating GHG emissions.

11.6.7 A set of standard data quality principles will be applied so that the results from the GHG assessment are as accurate and representative as possible:

- **Age:** Activity data and GHG emissions factors applicable to the study period will be used.
- **Geography:** Activity data will reflect the design of the Proposed Development. GHG emissions factors will be representative of the UK construction industry and UK transport sector.
- **Technology:** The default solution will be to apply data which is representative of the UK construction industry and transport sector. However, technology specific data may be used for the purpose of developing scenarios of the future.
- **Methodology:** Activity data will be gathered from the Proposed Development's engineering and design teams to enable consistency and completeness of data collection.
- **Competency:** Data gaps will be addressed through, for instance, peer reviewed papers (published in recognised journals) or industry specific literature (e.g. UK construction trade associations). GHG emissions factors from a range of sources will be used: EPDs (adhering to BS EN 15804 standard), LCA tools (aligned with best practice), and industry specific and UK Government sources.

11.6.8 In line with applicable guidelines from the World Business Council for Sustainable Development (WBCSD)/ World Resources Institute (WRI) Greenhouse Gas Protocol initiative, the GHG emissions study will be reported as tonnes of carbon dioxide equivalent (tCO_{2e}) and consider the seven Kyoto Protocol gases:

- Carbon-dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF₆)
- Nitrogen Trifluoride (NF₃)

11.6.9 Where insufficient data is available to quantify GHG emissions industry benchmarks or approximations based on other similar schemes will be used.

11.6.10 GHG emissions will be contextualised against the relevant 5-year carbon budget, and associated reduction targets.

11.6.11 Table 11-8 shows the current and future UK carbon budgets (Ref 74). The Committee on Climate Change published their recommendations for the UK's sixth carbon budget in early December 2020.

Table 11-8 UK Carbon Budgets

<i>Carbon Budget</i>	<i>Total Budget (MtCO₂e)</i>
3 rd (2018-2022)	2,544
4 th (2023-2027)	1,950
5 th (2028-2032)	1,725
6 th (2033-2037)	965

11.6.12 Department for Environment, Food and Rural Affairs (Defra) 2020 emissions factors (Ref 75) and embodied carbon data from the University of Bath Inventory of Carbon and Energy (ICE) (Ref 76) will be used as the source data for calculating GHG emissions.

Climate Change Resilience Assessment

11.6.13 The assessment of climate change resilience is undertaken for the Proposed Development to identify potential climate change impacts, and to consider their potential consequence and likelihood of occurrence, taking account of the measures incorporated into the design of the Proposed Development.

11.6.14 The types of receptors considered vulnerable to climate change, are:

- construction phase receptors (i.e. workforce, plant and machinery);
- the Proposed Development assets and their operation, maintenance and refurbishment (i.e. structures and drainage, technology assets, etc.); and
- end-users (i.e. staff and commercial operators etc).

11.6.15 The potential climate change impacts identified in the CCR assessment are determined based on the UKCP18 projections. There is no single prescribed format for undertaking such assessments; therefore, the approach adopted to undertaking and reporting the assessment has drawn on good practice from other similar developments and studies and is aligned with existing guidance such as that of IEMA (Ref 77).

11.6.16 The CCR assessment identifies potential climate change impacts and considers their potential consequence and likelihood of occurrence. The following key terms and definitions relating to the CCR assessment are used:

- **Climate hazard** – an acute weather or chronic climate related event, which has potential to do harm to environmental or community receptors or assets, for example, increased winter precipitation;
- **Climate change impact** – an impact from a climate hazard which affects the ability of the receptor or asset to maintain its function or purpose; and
- **Consequence** – any effect on the receptor or asset resulting from the climate hazard having an impact.

11.6.17 The assessment includes all infrastructure and assets associated with the Proposed Development. It assesses the resilience against both gradual climate change and the risks associated with an increased frequency of severe weather events as per the UKCP18 climate change projections.

11.6.18 For the operational phase of the Proposed Development, once potential impacts have been identified, the likelihood and consequence of each impact occurring to each receptor (where relevant) are assessed for the selected future time frame for operation.

11.6.19 Criteria used to determine the likelihood of an event occurring, based on its probability and frequency of occurrence, are detailed in Table 11-9. The consequence of an impact has been measured using the criteria detailed in Table 11-10.

Table 11-9 Description of Likelihood for Climate Change Hazard

<i>Likelihood Category</i>	<i>Description (probability and frequency of occurrence)</i>
Very likely	90-100% probability that the hazard will occur.
Likely	66-90% probability that the hazard will occur.
Possible, about as likely as not	33-66% probability that the hazard will occur.
Unlikely	0-33% probability that the hazard will occur.
Very unlikely	0-10% probability that the hazard will occur.

**The event is defined as the climate event (such as heatwave) and the hazard (such as overheated electrical equipment) occurring in combination*

Table 11-10 Measure of Consequence for Climate Change Resilience

<i>Consequence of Impact</i>	<i>Description</i>
Very high	Permanent damage to structures/assets; Complete loss of operation/service; Complete/partial renewal of infrastructure; Serious health effects, possible loss of life; Extreme financial impact; and Exceptional environmental damage.
High	Extensive infrastructure damage and complete loss of service; Some infrastructure renewal; Major health impacts; Major financial loss; and Considerable environmental impacts.
Medium	Partial infrastructure damage and some loss of service; Moderate financial impact; Adverse effects on health; and Adverse impact on the environment.
Low	Localised infrastructure disruption and minor loss of service; No permanent damage, minor restoration work required; and Small financial losses and/or slight adverse health or environmental effects.
Very low	No damage to infrastructure; No impacts on health or the environment; and No adverse financial impact.

11.6.20 The significance of each effect will then be evaluated through a matrix as detailed in Table 11-11. Any significant conclusions will be based on and incorporate confirmed design and mitigation measures. Any further design and mitigation measures will then be incorporated, and then residual risks will be reassessed until a non-significant acceptable level is achieved.

Table 11-11 Significance Criteria for Climate Change Resilience Assessment

		<i>Likelihood of climate change hazard occurring</i>				
		<i>Very unlikely</i>	<i>Unlikely</i>	<i>Possible</i>	<i>Likely</i>	<i>Very likely</i>
<i>Consequence</i>	<i>Very low</i>	Negligible	Negligible	Negligible	Negligible	Negligible
	<i>Low</i>	Negligible	Minor	Minor	Minor	Minor
	<i>Medium</i>	Negligible	Minor	Moderate	Moderate	Moderate

<i>High</i>	Negligible	Minor	Moderate	Major	Major
<i>Very high</i>	Negligible	Minor	Moderate	Major	Major

11.7 Assumptions, Limitations and Uncertainties

- 11.7.1 It is not anticipated that there will be any additional climate change resilience impacts on the construction or operation of the Proposed Development. It is proposed that a climate change resilience assessment is therefore scoped out of the ES. Neither is it anticipated that there will be any additional in-combination climate change impacts as a result of the Proposed Development. It is proposed that an in-combination climate change impact assessment is also scoped of the EIA.
- 11.7.2 While it is not anticipated that there will be any increase in GHG emissions as a result of the construction or operation of the Proposed Development it is proposed that a GHG assessment is undertaken to provide evidence of this.
- 11.7.3 Where possible, GHG calculations will be based on the available data. Where specific data is absent, calculations will be transparently based on specified assumptions and proxies. At the options selection stage, a qualitative assessment will be undertaken. For future stages, as improved data becomes available, a quantitative assessment will be undertaken.
- 11.7.4 All assumptions, limitations and exclusions (including exclusion criteria applied to input and output data) will be documented as part of the assessment.

12 Other Environmental Topics

12.1 Introduction

- 12.1.1 The aim of the scoping stage is to focus the EIA on those environmental aspects that may be significantly affected by the Proposed Development. The following section provides a summary of other environmental topics which have been considered during the preparation of this Scoping Report. It is proposed that these topics can be addressed relatively briefly and qualitatively, without requiring modelling, detailed assessment, or standalone chapters.
- 12.1.2 The Other Environmental Issues chapter of the ES will include a brief assessment of each of the topics mentioned below, supported by a technical note that will be appended to the ES where supplementary information is helpful. The generic EIA methodology set out in Chapter 6: EIA Methodology, of this Scoping Report, will not apply to this chapter; it may not be necessary for example to outline an assessment methodology or baseline conditions if it is quickly obvious that the impacts will be none or negligible.

12.2 Flood Risk, Drainage and Surface Water

- 12.2.1 This section assesses the potential effects of the Proposed Development on water resources, both within the boundary of the Proposed Development Site and in the immediate surrounding area.
- 12.2.2 Given that there is no change to the footprint, massing, height or any ground disturbance associated with the Proposed Development, there are not anticipated to be any construction or decommissioning impacts.
- 12.2.3 The operational phase is not expected to change the water demand or discharge relative to the consented scheme. The Site is however over 1ha in size and therefore a Flood Risk Assessment (FRA) is required and will be delivered as an appendix to the ES, unless the Site is reduced in size (below 1ha).

Study Area

- 12.2.4 The study area for the flood risk assessment includes the land within the Site and any surrounding land that is influenced by watercourses.

Baseline Conditions

- 12.2.5 The entire Proposed Development Site and surrounding area in the immediate vicinity of the Site is located within Flood Zone 1. Flood Zone 1 is land assessed as having a less than 1 in 1000 annual probability of flooding from rivers or the sea (<0.1% Annual Exceedance Probability or AEP).
- 12.2.6 According to the Preliminary Flood Risk Assessment there are no recorded instances of historical groundwater flooding within the vicinity of the Proposed Development Site. The Strategic Flood Risk Assessment¹ states that groundwater flooding is not considered to be an issue at the Slough Trading Estate. The Proposed Development Site is considered to be at low risk of flooding from groundwater sources.
- 12.2.7 Online surface water flood maps (Ref 78) show the southern area of the Proposed Development at risk from surface water flooding, with water ponded in areas of lower topography with depths from less than 0.3m to between 0.3m and 0.9m. The Preliminary Flood Risk Assessment identifies historical surface water flooding incidents along Edinburgh Avenue and to the south on Buckingham Avenue. The risk to the Proposed Development Site from surface water run-off or pluvial sources under the baseline is considered to be a moderate (or medium) risk.

- 12.2.8 The Strategic Flood Risk Assessment states that there are known problems associated with sewer flooding in Slough and details historical and anecdotal evidence of surface water and sewer flooding both within the Proposed Development Site boundary and within the wider Slough Trading Estate. Based on this information, the risk of flooding from sewer sources in proximity and within the Site is considered to be a moderate (or medium) risk.
- 12.2.9 The Proposed Development Site is not considered at risk from reservoir flooding (<https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>). There are no other sources of flood risk from artificial waterbodies (lakes, canals etc) located in close proximity to the Proposed Development Site.
- 12.2.10 The Flood Risk Assessment Climate Change Guidance states that climate change is likely to have an impact on peak river flows and peak rainfall intensity. Given the distance of the Proposed Development Site from the identified surface watercourses and intervening topography it is unlikely that the risk of flooding from fluvial sources will increase over the lifetime of the development.
- 12.2.11 The risk of flooding to and from the Site could potentially increase in future due to an increase in rainfall intensity that may increase surface water runoff rates and consequently runoff volumes. The Strategic Flood Risk Assessment identified concerns regarding the ability of the surface water sewers in the Slough Estates area to accommodate any significant increase in flows. Therefore, climate change will further increase the risk of sewer flooding at the Site.

Potential Effects and Mitigation

Construction Phase Effects

- 12.2.12 The Works associated with the Proposed Development are predominately within the boiler house or turbine hall, and a single pipe which will be elevated above ground on external pipe runs alongside other pipes between the two buildings on pipe racks to be installed as part of the TCPA consented facility currently under construction. Therefore, no new ground will be broken as part of the works and there will be no change the consented building envelope.
- 12.2.13 The construction of the Scheme will take place in accordance with a Construction Environmental Management Plan (CEMP), which will be prepared alongside the ES. The CEMP details the measures that would be undertaken during construction to mitigate the temporary effects on the water environment.
- 12.2.14 The CEMP will comprise good practice methods that are established and effective measures to which the development will be committed. The measures within the CEMP will focus on managing the risk of pollution to surface waters and the groundwater environment. It will also consider the management of activities within floodplain areas (i.e. kept to a minimum and with temporary land take required for construction to be located out of the floodplain as far as reasonably practicable).
- 12.2.15 The CEMP will be reviewed, revised and updated as the project progresses to ensure all potential impacts and residual effects are considered and addressed as far as practicable, in keeping with available good practice at that point in time.
- 12.2.16 Given the implementation of the CEMP, as is standard practice, it is considered that there would be adequate mitigation for potential effects on the surface and groundwater environment, and so construction effects are **scoped out** of further assessment.

Operational Phase Effects

- 12.2.17 The Proposed Development is not likely to have any potential water environment impacts while operational, over or above those assessed within the TCPA consented scheme.

12.2.18 Cooling Tower (CT) 8 and its associated pumps will be utilised by the Proposed Development. This is the same as for the consented scheme, but with the difference that it will now be solely connected to and utilised by the Proposed Development rather than operated as shared infrastructure (to other energy generating activities on the SHP site). The amount of CT blowdown/evaporation will be unchanged or less in comparison to the consented scheme because the Proposed Development will be using more of the heat to generate electricity. Therefore, the potable water demand will be the same or less than is associated with the consented scheme. A modern design of CT packing should also reduce water usage. In addition, the Proposed Development will have the ability to reuse approximately 15% of the Cooling Tower blowdown water as part of the process (ash quenching and furnace water spray/cleaning) to avoid using potable water.

12.2.19 On the basis that it is expected that potential water environment impacts will be unchanged or less than the TCPA consented facility, operational effects are therefore **scoped out**. It is not proposed that a Drainage Strategy is required as part of the DCO application either.

12.2.20 Morphological impacts to watercourses are **scoped out** due to the distance of any surface watercourse from the Proposed Development. As such, there will be no direct physical impacts to any watercourse.

Decommissioning Phase Effects

12.2.21 Effects arising from the process of decommissioning the Proposed Development are considered to be of a similar nature and duration to those arising from the construction process. Given the standard mitigation measures within this document to protect the surface and groundwater environment, decommissioning effects are **scoped out** of further assessment.

Assessment Methodology

12.2.22 Given the small scale change, it is anticipated that water, drainage and flood risk can be addressed briefly in the Other Issues chapter and does not warrant a separate chapter, due to its expected brevity.

12.2.23 An FRA is required in accordance with the NPPF, NPS EN-1 and Draft NPS EN-1 due to the size (over 1 ha) and location of the Proposed Development (in Flood Zone 1). The FRA will be appended to the ES and will consider risks to the Proposed Development from flooding as well as identify how, if at all, the risk of flooding will change as a result of the Proposed Development (including taking climate change into account). Where appropriate, recommendations to manage flood risks to an acceptable level will be made, considering the vulnerability of the Proposed Development to flooding, so that the development remains safe throughout its lifetime. This will inform the design of the Proposed Development as well as the EIA.

12.3 Major Accidents and Disasters

12.3.1 The vulnerability of the Proposed Development to major accidents and disasters is now transposed into law following changes to EU Legislation. The revised EIA Directive states the need to assess:

'the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or natural disasters which are relevant to the project concerned.'

12.3.2 Major accidents and disasters are by nature very infrequent and low probability events, as such it would not be appropriate to consider the cumulative impacts associated with similar simultaneous events occurring at other nearby facilities where there is no direct connection. The method proposed would be for risk identification to be implemented which would identify, classify and evaluate risk and assessment guidance based on professional judgement.

12.3.3 For the purposes of clarity, a Major Event is defined as:

'an acute or chronic accident or disaster, of human or natural origin, which occurs either as a consequence of, or which interacts with, the construction or operation of the Proposed Scheme, and which has substantial consequences for people or the environment'.

- 12.3.4 For the purpose of this Proposed Development, a brief assessment will be provided in the ES to consider any risks posed by the additional 10MW increase in electrical output in relation to major accidents and disasters and the more efficient use of the combustion heat. It is not anticipated that the Proposed Development would change the vulnerability of the consented scheme to major accidents and disasters, but this will be justified in the chapter.

13 Topics to be Scoped Out

13.1 Introduction

- 13.1.1 This chapter provides details of environmental topics that will be scoped out of the ES. Each of the following sections provides reasoning for this conclusion.

13.2 Aviation

- 13.2.1 Heathrow Airport is the closest airport located approximately 11km southeast of the Proposed Development.
- 13.2.2 The consented Multifuel buildings, currently under construction, will remain as permitted in the original TCPA scheme. The engineering works which are considered to be an 'Extension' to the existing Slough Multifuel Facility to facilitate an increase in energy production, for the most part will be internal and there will not be any material change to the visual appearance or size of the Multifuel building or stack from that which was approved by the planning permission in 2017.
- 13.2.3 Furthermore, the consented Multifuel building height of approximately 48m and expected temporary construction crane for the Proposed Development will be lower than the existing north stack, and as such, it is considered no assessment of potential aviation impacts will be required as part of this EIA. It is therefore recommended that aviation is **scoped out** of the forthcoming EIA.

13.3 Cultural Heritage

- 13.3.1 The Proposed Development will not involve any breaking of ground or underground works, and therefore has no potential to affect buried archaeology.
- 13.3.2 The Proposed Development will not change the height, building envelope or height of the consented scheme. The main external amendment to the consented scheme will be the presence, 18m above ground level, of one additional pipe of similar dimensions to the three pipes in the same location within the consented scheme. In common with the three pipes present in the consented scheme the additional external pipe may only be visible from Liverpool Road to the east of the scheme, and only then with the backdrop of the consented scheme and SHP buildings behind. There are not expected to be any material changes to the visual amenity which may be viewed from above ground heritage assets or affect the setting of heritage assets.
- 13.3.3 The Proposed Development site is also shielded within a historically established urban industrial estate. Only two designated Grade II listed buildings are within the 1km radial distance of the Proposed Development site and while they have a medium value as heritage assets, the magnitude of impact on them from the Proposed Development would be considered very low resulting in a negligible effect with no loss of significance. Although there are a large number of high value assets within the 5km radial study area, these are shielded from the Proposed Development by both distance as well as the existing urban landscape.
- 13.3.4 Given that the Proposed Development will be contained within the Slough Multifuel facility and will have no below ground interventions, it is recommended that cultural heritage is **scoped out** of the forthcoming EIA.

13.4 Landscape and Visual Amenity

- 13.4.1 Landscape effects relate to changes to the landscape as a resource, including physical changes to the fabric or individual elements of the landscape, its aesthetic or perceptual qualities, and landscape character.
- 13.4.2 Visual effects relate to changes to existing views of identified visual receptors ('people'), from the loss or addition of features within their view due to the Proposed Development.

- 13.4.3 The construction works associated with the Proposed Development will be indistinguishable from the construction of the consented scheme as they will take place at the same time with the majority located inside the consented scheme buildings. Should the construction of the Proposed Development be delayed and become sequential, it would still not be expected to lead to likely significant effects given the negligible external works planned.
- 13.4.4 There will be no change to the building envelope of the consented scheme. The only visible external change to the building of the consented scheme will be a single new steam pipe which will be added next to three consented pipes at 18m above ground level within a pipe rack associated with the consented scheme. This is only expected to be visible from the east of the Site, from within the industrial area and not disguisable from any viewpoint external to the Site. This is illustrated in the following plates.

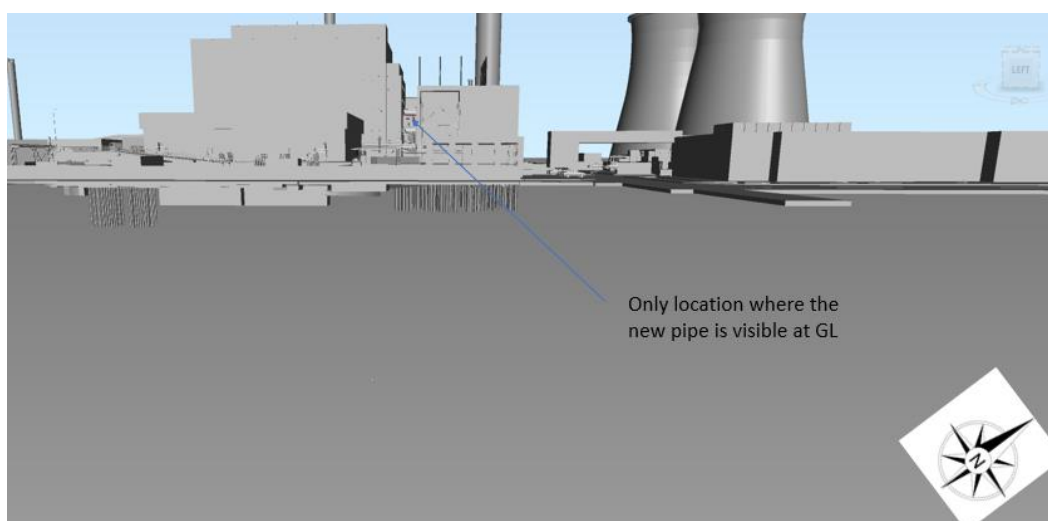


Plate 13.1 - Consented scheme and the Proposed Development, bare earth view from Liverpool Road (200m NNE) – view between gap of two buildings from model



Plate 13.2 - View from Liverpool Road (220m east) view between gap of two buildings (baseline prior to demolition onsite).



Plate 13.3 - Existing view from Bodmin Avenue (250m north)

13.4.5 Given the absence of any visibility of the Proposed Development, it is considered that landscape and visual can be **scoped out** of this EIA.

13.5 Telecommunications

- 13.5.1 The existing Slough Multifuel Facility gained planning permission under the TCPA (Planning Ref: P/00987/024 and P/00987/025) and the application for that scheme assessed the potential effects on digital terrestrial and satellite television reception associated with the consented scheme. The assessment also considered potential effects on radio reception, mobile telephone signals, wireless networks and emergency service communications. This DCO application is for an extension to the existing permitted scheme and the changes are predominantly internal. The height and scale of the permitted scheme which was assessed in the 2014 ES remains unaltered by the Proposed Development. As such, it is considered that issues relating to TV and Radio can be **scoped out** of this EIA.
- 13.5.2 The Proposed Development will not lead to any significant increase in construction and therefore associated temporary structures such as cranes and scaffolding over and above that from the existing consented development. It is therefore considered that both construction and operational phase TV and Radio or electronic interference can also be **scoped out** of the EIA.

13.6 Ground Conditions

- 13.6.1 With regard to the consented Multifuel facility all the demolition works at the Site have been completed, and construction works will be progressed with steel works becoming visible above ground at the time of submitting the DCO application for the Proposed Development. The works associated with the Proposed Development will involve mechanical modification and physical works to the consented scheme, including construction of heat exchanger bundles, pipework, valves, pipe supports, thermal insulation, instrumentation, and cabling and containment, to increase the thermal efficiency of the generating station. The consented building envelope and architecture will remain unchanged.
- 13.6.2 Historical investigations at the SHP site (which include the Site) did not identify gross contamination at the Site. In addition, the Site would not be subject to ground disturbance as part of the works required for the Proposed Development. Therefore, potential pollutant linkages between any residual potential source of ground contamination and sensitive receptors (Human Health and Controlled Waters) are considered unlikely.
- 13.6.3 For this reason, it is considered that an assessment of the potential for impact on Human Health or Controlled Waters would not be required for the Proposed Development and ground conditions will be **scoped out** of the assessment.
- 13.6.4 The environmental design and management measures indicated in the 2014 ES are expected to remain valid for the works associated with the Proposed Development.

13.7 Waste

- 13.7.1 The Proposed Development will not lead to any significant increase in construction waste over and above that from the existing consented development, and nor is there expected to be any change in the types and quantities of operational waste generated by the Proposed Development (which will comprise primarily bottom ash and air pollution control residues). It is therefore considered that both construction and operational phase waste generation can also be **scoped out** of the EIA.

13.8 Human Health

- 13.8.1 The Proposed Development design will minimise any risk to human health resulting from construction, operation and decommissioning of the Proposed Development.
- 13.8.2 It is anticipated that there will be limited interactions with the Proposed Development and human health during construction, operation, and decommissioning. Whilst there may be some minimal impacts generated by the Proposed Development (such as noise and air quality), these are not anticipated to result in any significant health and well-being effects. It is therefore considered, that at this stage, health can be **scoped out** of the EIA.

13.9 Socio Economics

13.9.1 The Proposed Development may generate a number of temporary and permanent socio-economic effects. These are:

- temporary employment during the construction and decommissioning phases of the Proposed Development;
- gross value added during the construction and decommissioning phases of the Proposed Development;
- creation of long-term employment opportunities once the Proposed Development is operational; and
- other topic impacts from the Proposed Development that have a socio-economic implication.

13.9.2 Whilst there be some minimal changes to employment through the additional 20 staff for 2 months during construction, the Proposed Development is not anticipated to have any significant socio-economic effects. It is therefore considered that at this stage, socio-economics can be **scoped out** of the EIA.

14 Structure of the Environmental Statement

- 14.1.1 The ES will consist of two volumes and a Non-Technical Summary (NTS). This section provides a summary of each document that will form the ES.
- 14.1.2 **ES Volume 1: Main Report** – this will form the main body of the ES, detailing the results of the environmental assessment, likely significant effects arising from the Proposed Development, and the proposed mitigation measures. The ES will also identify opportunities for social and economic benefits and environmental enhancement. The ES is divided into a number of background and technical chapters, each being supported with figures and tabular information. ES Volume 1 will consider the environmental effects associated with a number of identified topics, which may receive significant environmental effects. Each topic will be assigned a separate technical chapter in the ES as follows:
- Chapter 7: Transport;
 - Chapter 8: Air Quality;
 - Chapter 9: Noise and Vibration;
 - Chapter 10: Ecology;
 - Chapter 11: Climate; and
 - Chapter 12: Other Issues Topics.
- 14.1.3 In addition to the above, the following chapters will be provided as part of the ES:
- Chapter 1: Introduction;
 - Chapter 2: The Proposed Development;
 - Chapter 3: Alternatives and Design Evolution;
 - Chapter 4: Existing Site Conditions;
 - Chapter 5: Consultation;
 - Chapter 6: Environmental Impact Assessment Methodology;
 - Chapter 13: Effect Interactions; and
 - Chapter 14: Summary of Environmental Effects.
- 14.1.4 **ES Volume 2: Technical Appendices** – A complete set of appendices will be provided for reference. These comprise of background data, technical reports, tables, figures and surveys which support the assessments in ES Volume 1.
- 14.1.5 **ES Non-Technical Summary (NTS)** – The NTS will be presented in a separate document and provides a concise description of the Proposed Development, the considered alternatives, baseline, assessment methodology, potential environmental effects and mitigation measures. The NTS will be designed to provide information on the Proposed Development in an accessible format which can be understood by a wide audience and to assist interested parties with their familiarisation of the project.

15 Summary and Conclusions

- 15.1.1 This Scoping Report represents notification under Regulation 8(1)(b) of the EIA Regulations that the Applicant will undertake an EIA in respect of the Proposed Development and produce an ES to report the findings of the EIA.
- 15.1.2 It also represents a formal application to PINS under Regulation 10 of the EIA Regulations for a ‘Scoping Opinion’ as to the information to be provided within the ES that will form part of the DCO application. This report has identified the environmental effects that are considered to have the potential to be significant and proposes the approach to be used in assessments that will be undertaken for the EIA to characterise and understand the significance of these effects. The prescribed consultees are invited to consider the contents of this report and comment accordingly within the statutory 42-day time period.
- 15.1.3 For clarity, Table 15-1 presents a summary of the proposed scope of the technical topics as well as which elements of these topics that are to be scoped out and the rationale behind this decision.

Table 15-1 Scope of Technical Topics including elements to be scoped out

Environmental Topic	Proposed Scope of Assessment (Scoped In)	Element Proposed to be Scoped Out	Rational for Scoping Out
Transport & Access	Transport Statement and ES chapter, addressing construction and decommissioning trips.	Operational traffic;	There will be no change from the consented scheme during operation.
		Construction Traffic Management Plan/ Travel Plan	There will be less than an average 1 HGV per day during construction, which is clearly a negligible change and does not warrant a CTMP / Travel Plan. This can be adequately dealt with in the Transport Statement.
Air Quality	Construction dust and Multifuel Facility Stack Emissions, including CT8 visible plume	Human Health Risk Assessment (HHRA)	The HHRA for the consented Slough Multifuel Facility remains valid. The modelling of stack emissions is expected to show no change or a benefit compared with the consented scheme.
		Construction traffic emissions	The number of additional trips is below the threshold in industry guidance for assessment. Magnitude of impact from the Proposed Development and the consented scheme will be the same and use of traffic management measures relevant to air quality that have proven successful for the consented scheme will be effective for the Proposed Development.
		Operational traffic emissions; and	There will be no additional road traffic during operation attributed to the Proposed Development

Environmental Topic	Proposed Scope of Assessment (Scoped In)	Element Proposed to be Scoped Out	Rational for Scoping Out
		Odour assessment	The amount of material being delivered is the same as the consented scheme with the same level of odour emission as previously assessed. Odour from the site can be adequately controlled with the adoption of similar good practice measures to those outlined for the consented development.
Noise & Vibration	Baseline noise monitoring will be undertaken at locations representative of surrounding noise sensitive receptors. An assessment of construction and decommissioning plant noise, and operational plant will be undertaken.	None	N/A
Ecology	Ecological Impact Assessment (EclA) HRA (expected to be Screening stage only)	Roosting Bats Flora	The site has been cleared as part of the consented scheme and previous buildings with suitability for bats have been removed. No flora will be affected by the Proposed Development.
Climate Change	Assessment of GHG emissions and an in-combination climate change impact assessment	None	N/A
Flood Risk, Drainage and Surface Water	Brief dialogue in Other Issues chapter. FRA will be prepared as the Site is >1 ha.	Drainage, Water Use, and Water Discharge Scoped Out.	The massing, height, location of the consented scheme will not change and therefore there will be no construction impacts. There will be no increase in water demand, use, or discharge relative to the consented scheme in any phase of development.
Major Accidents and Disasters	Brief dialogue in Other Issues chapter. Assessment of the risks posed by the additional 10MW increase in electrical output	None	N/A
Aviation	None	Topic Scoped out	No change in height, massing, or location from the consented scheme.
Cultural Heritage	None	Topic Scoped out	No groundworks associated with the Proposed Development.

Environmental Topic	Proposed Scope of Assessment (Scoped In)	Element Proposed to be Scoped Out	Rational for Scoping Out
Landscape and Visual	None	Topic Scoped out	No visual impact of the Proposed Development from the viewpoints identified and considered. No assessment required.
Telecommunications	None	Topic Scoped out	No change to the height or scale/massing, or location of the consented scheme. No significant increase in construction and associated temporary structures.
Ground Conditions	None	Topic Scoped out	No ground disturbance required for the works.
Waste	None	Topic Scoped out	Clearly negligible increase in construction waste or types over and above that from the existing consented development. No change in waste or residue waste during operation compared with the consented scheme.
Human Health	None	Topic Scoped out	Limited interaction with human health during construction, operation and decommissioning. Human health will also be covered in the air quality and noise chapter.
Socio Economics	None	Topic Scoped out	The Proposed Development will only have minimal increase in staff (20) over a two month construction period with no significant socio-economic effects. There will be no change during operation.

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Appendix A - Figures

- Figure 1 Proposed Development Location
- Figure 2 Site Setting
- Figure 3A Proposed Development Site Boundary
- Figure 3B Consented Multifuel Scheme
- Figure 4 Environmental Constraints



PROJECT



CLIENT

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LEGEND

Red Line Boundary

NOTES

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Scoping Report

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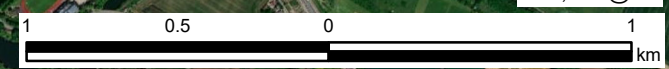
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Site Location Plan

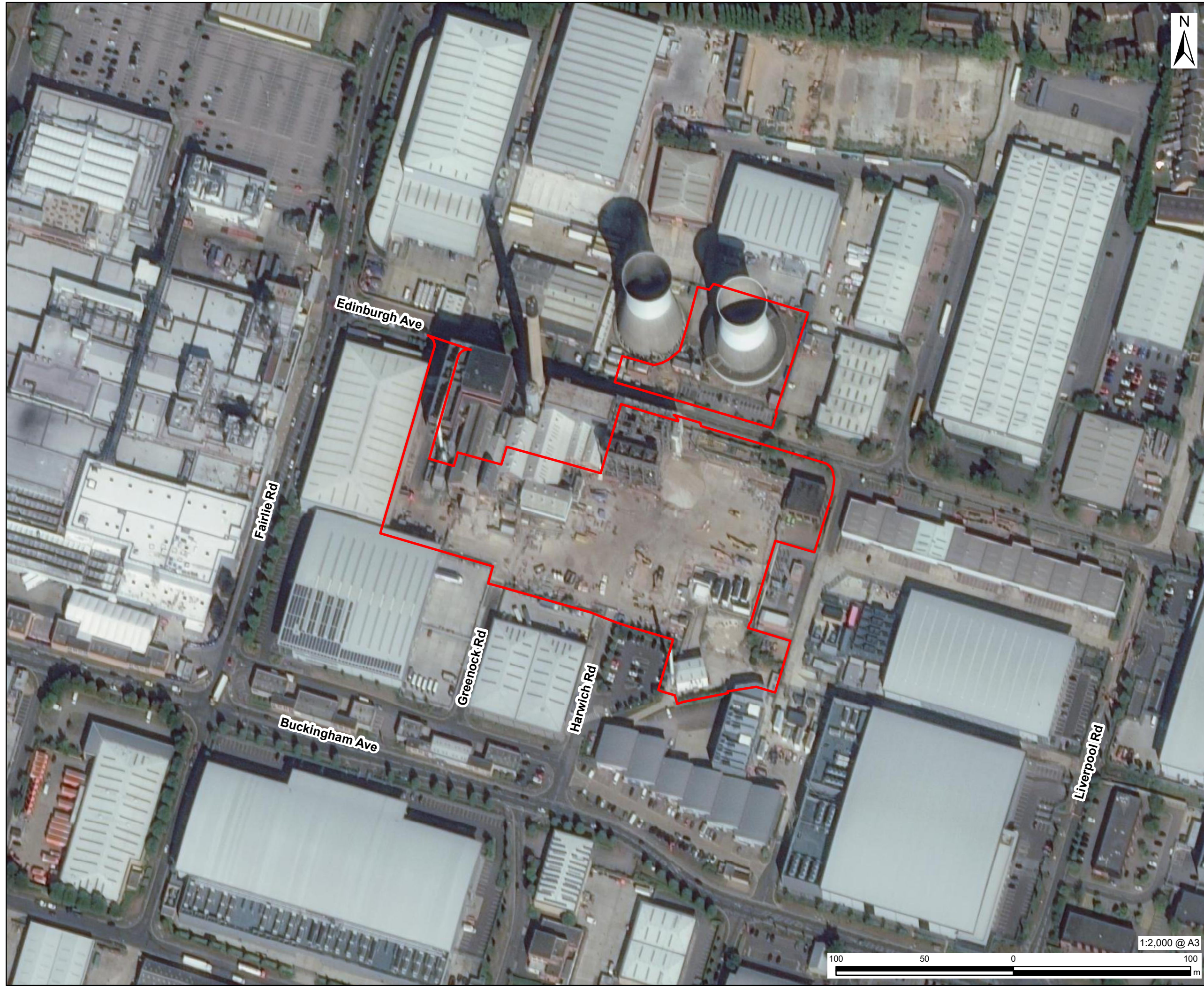
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Figure 1

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Proposed Development Site Boundary

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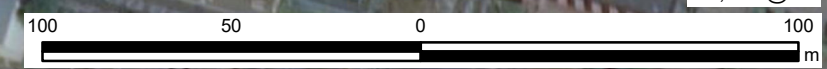
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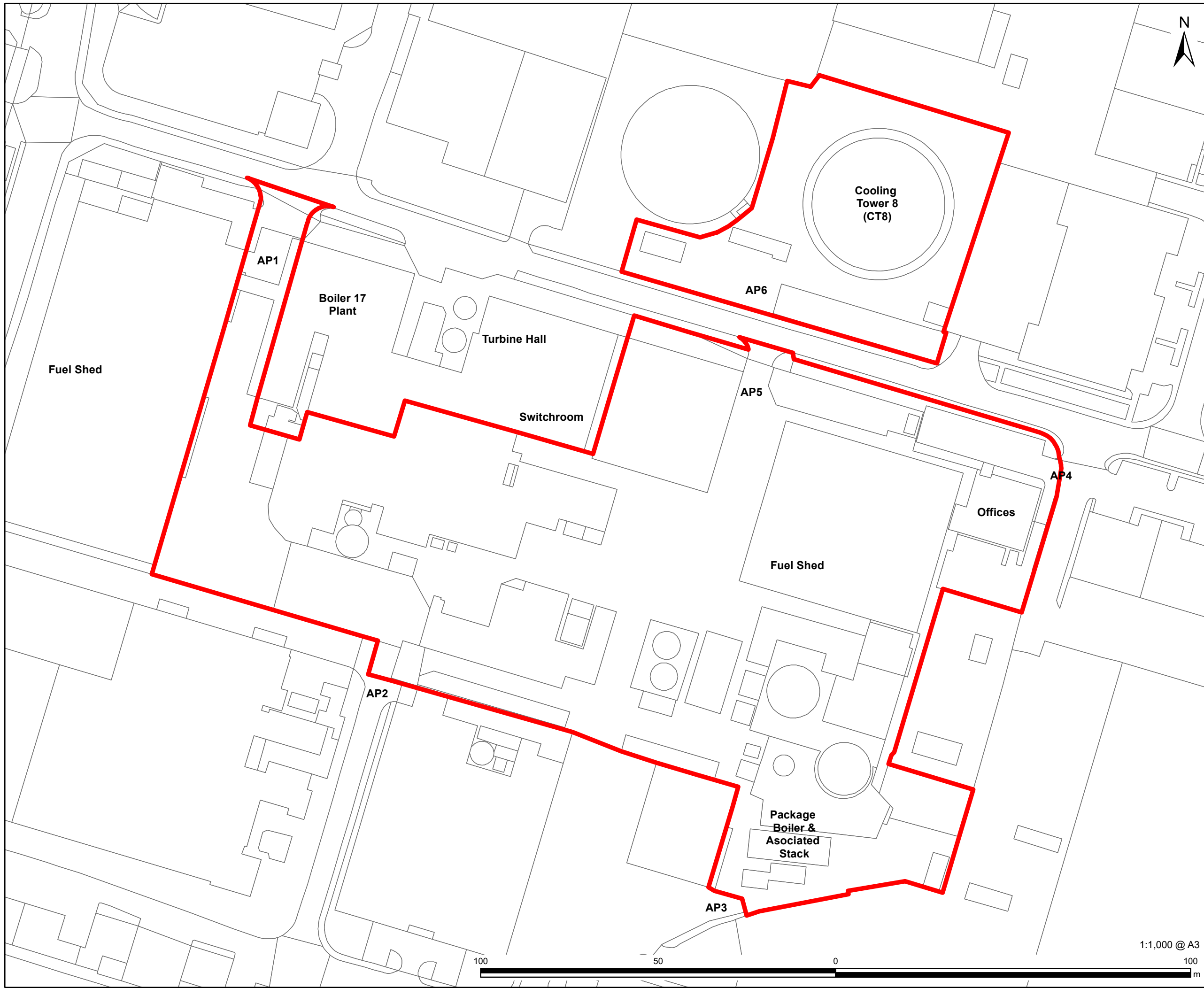
Site Setting

Figure 2

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Proposed Development Site Boundary

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Scoping Report

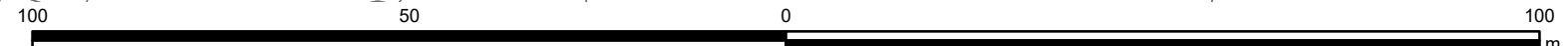
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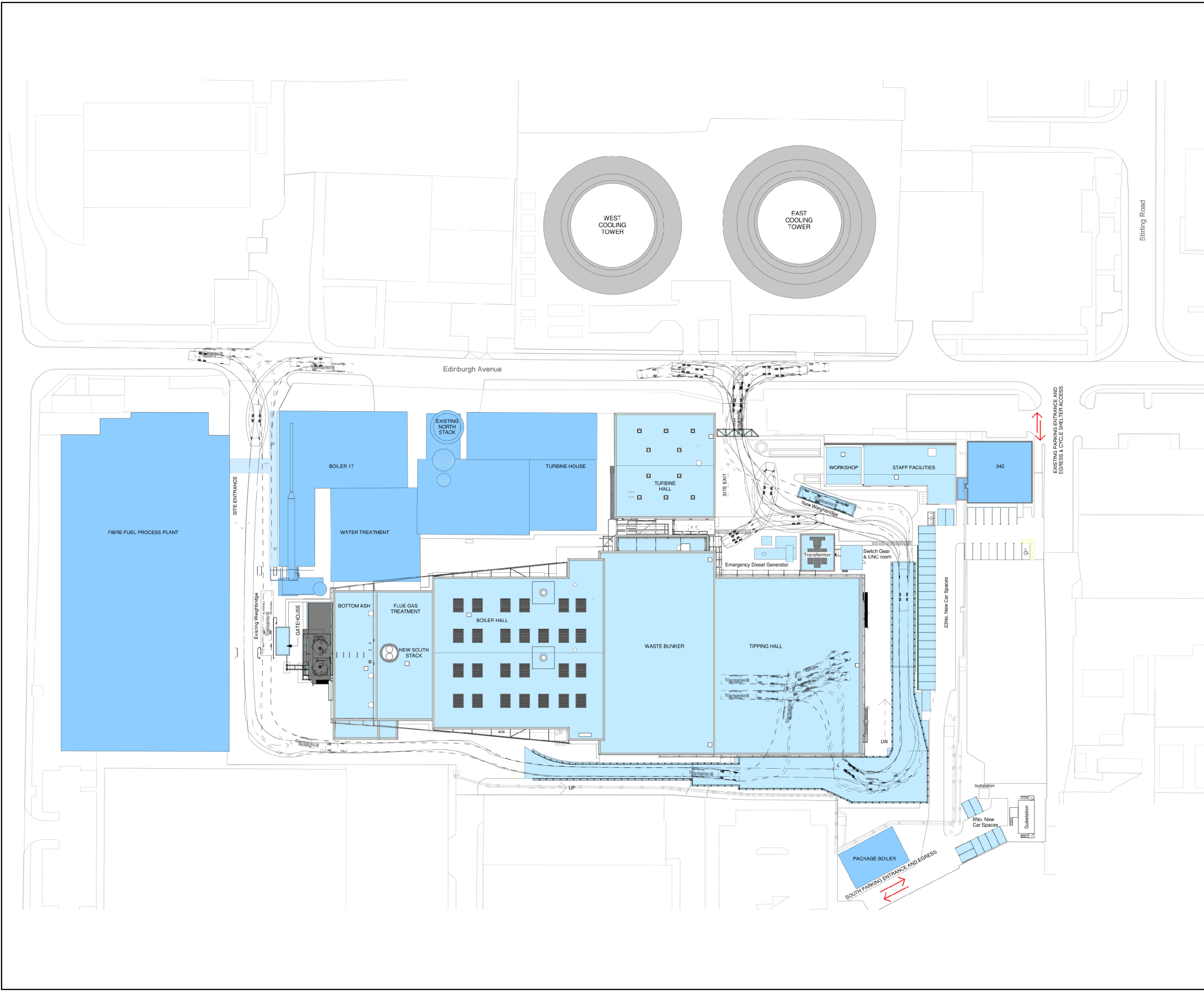
Proposed Development Site Boundary

Figure 3A

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- Consented Multifuel Scheme
- Slough Heat and Power (SHP) Plant

Not to scale

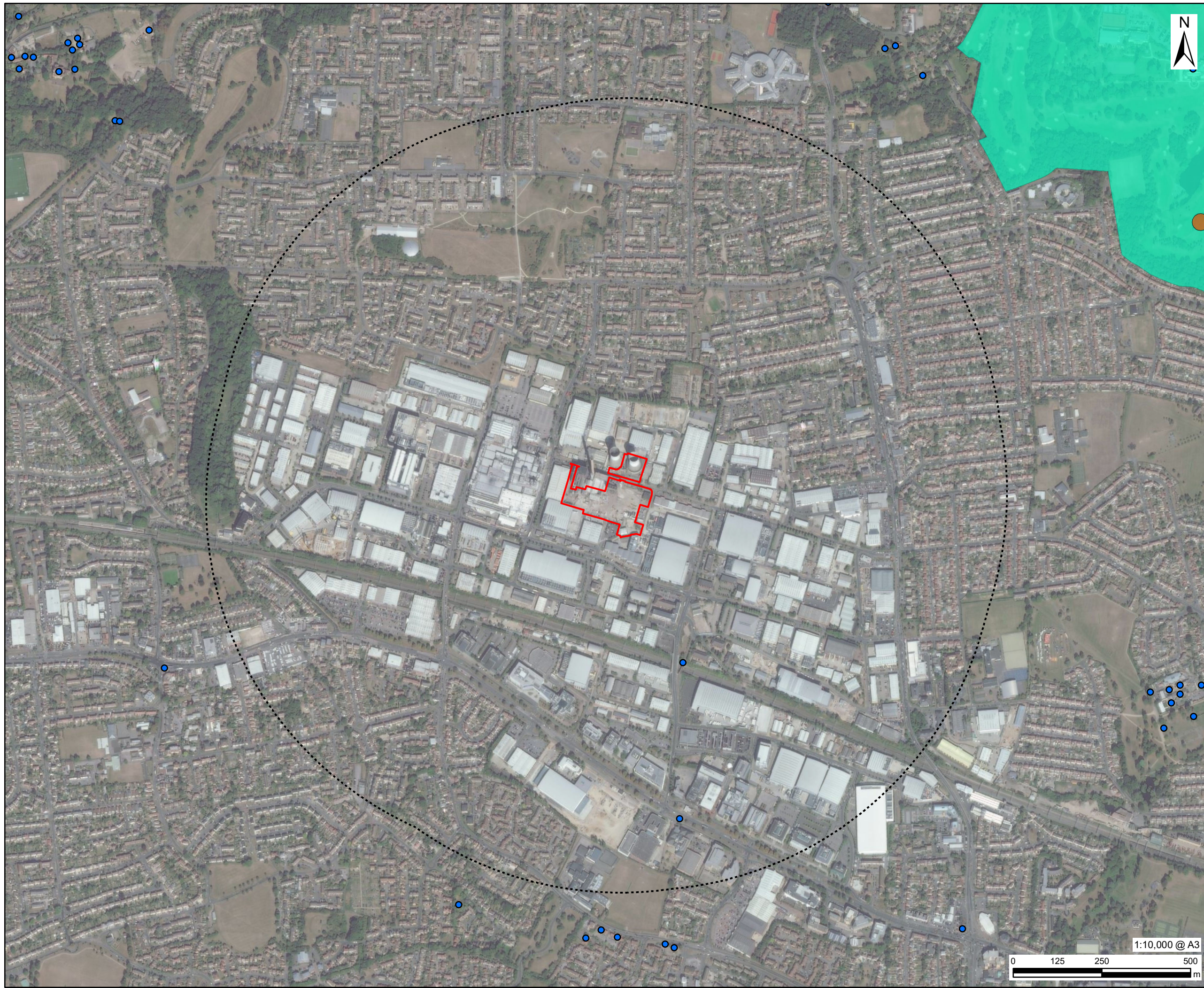
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Consented Multifuel Scheme

Figure 3B

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- Proposed Development
- Site Boundary
- Registered Parks & Garden
- Scheduled Monument
- Listed Buildings

NOTES

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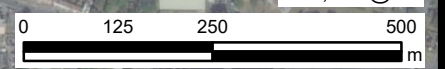
FIGURE TITLE

Constraints Plan

FIGURE NUMBER

Figure 4

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Appendix B – Glossary

Baseline conditions	The conditions against which potential effects arising from the Proposed Development are identified and evaluated.
Construction Environmental Management Plan (CEMP)	A site specific plan developed to ensure that appropriate environmental management practices are followed during the construction phase of a project.
Cumulative Effects	<p>Effects upon the environment that result from the incremental impact of an action when added to other past, present or reasonably foreseeable actions.</p> <p>Each impact by itself may not be significant but can become a significant effect when combined with other impacts.</p>
Development Consent Order (DCO)	A statutory instrument granted by the Secretary of State to authorise the construction and development of a Nationally Significant Infrastructure Project, as defined by the Planning Act 2008.
Environmental Impact Assessment (EIA)	A process by which information about environmental effects of a proposed development is collected, assessed and used to inform decision making. For certain projects, EIA is a statutory requirement.
Environmental effect	The consequence of an action (impact) upon the environment such as the decline of a breeding bird population as a result of the removal of hedgerows and trees.
Environmental impact	The change in the environment from a development such as the removal of a hedgerow.
Environmental Statement	A document produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations to report the results of an EIA.
Extension (as defined for the purposes of a DCO)	Defined as “additional engineering works achieved through mechanical modification and physical works to the consented scheme”. This is the Proposed Development.
Preliminary Ecological Appraisal (PEA)	Comprises a desk study, Phase 1 Habitat Survey (which categorises habitats to a broad level using the methodologies set out by JNCC (1993 as amended) guidelines) and Protected Species Scoping survey (which includes preliminary survey work to identify the presence or potential presence of legally protected species).

Flood Zone 3	This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
Flood Zone 2	This zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year.
Flood Zone 1	This is land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1% Annual Exceedance Probability (AEP)).
Heavy Goods Vehicle (HGV)	Vehicles with 3 axles (articulated) or 4 or more axles (rigid and articulated).
Historic Environment Record	The record of archaeological and built heritage features in a county or district, usually held and maintained by the relevant County Council.
Mitigation	Measures including any process, activity, or design to avoid, prevent, reduce, or, if possible, offset any identified significant adverse effects on the environment.
NPS	National Policy Statement. National Policy Statements are produced by government. They comprise the government's central policy documents for the development of nationally significant infrastructure.
Nationally Significant Infrastructure Projects (NSIP)	NSIPs are large scale developments such as certain new harbours, power generating stations (including wind farms), highways developments and electricity transmission lines, which require a type of consent known as 'development consent' under procedures governed by the Planning Act 2008 (and amended by the Localism Act 2011).
Preliminary Environmental Information (PEI)	PEI is defined in the EIA Regulations as: " <i>information referred to in Regulation 14(2) which –</i> <i>(a) has been compiled by the applicant; and</i> <i>(b) is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development).</i> "
Principal Aquifer	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.
Proposed Development	The extension works for which a DCO is being sought.

Proposed Development Site	The area of the Proposed Development as set out in Figure 3
Receptor	A component of the natural or man-made environment that is affected by an impact, including people.
Setting	The surroundings within which a heritage asset is experienced and any element, which contributes to the understanding of its significance.
SHP Site	The complete Slough Heat and Power (SHP) site including the Proposed Development Site and SHP operational plant and offices
Site Boundary	The maximum extent of land potentially required temporarily and/or permanently for the construction, operation and maintenance of the Scheme.
Source Protection Zone (SPZ)	SPZs show the risk of contamination from any activities that might cause pollution to groundwater sources such as wells, boreholes and springs used for public water supplies. The closer the activity, the greater the risk. SPZs can comprise of up to three main zones (inner, outer and total catchment). A fourth zone of special interest can also occasionally be applied to a groundwater source.
Sustainable drainage systems (SUDS)	Surface water drainage systems developed in line with the ideals of sustainable development (e.g. swales, ponds, basins, filtration flow control, etc).
Town and Country Planning Act	An Act of the UK Parliament regulating the development of land in England and Wales.
Transformers	Transformers control the voltage of the electricity generated across the site before it reaches the electrical infrastructure.
Visual receptors	People with views of the development or associated activities. These are located within the visual envelope and are typically residents, motorists, pedestrians, recreational users in residential areas on publicly accessible roads, footpaths and open spaces.
Water Framework Directive	<p>The Water Framework Directive ("WFD") introduced a new system for monitoring and classifying the quality of surface and ground waters.</p> <p>The Directive requires that Environmental Objectives be set for all surface waters and groundwater to enable them to achieve Good Ecological Potential/Status by a defined date.</p>
Zone of Theoretical Visibility	The zone within which views of a proposed development may be experienced, as determined by analysis of OS data and field survey. It is influenced by many factors including topography and intermediate visual intrusions, such as blocks of woodland and buildings.

Appendix C – Abbreviations

agl	Above ground level
AOD	Above Ordnance Datum
AQMA	Air Quality Management Area
BAP	Biodiversity Action Plan
BNG	Biodiversity Net Gain
BS	British Standard
BGS	British Geological Survey
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
COPA	Control of Pollution Act 1974
COSHH	Control of Substances Hazardous to Health
DC	Direct current
DCO	Development Consent Order
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EPS	European Protected Species
EPUK	Environmental Protection UK
ERP	Emergency Response Plan
ES	Environmental Statement
EU	European Union
FRA	Flood Risk Assessment
GHG	Greenhouse gas
GLVIA3	Guidelines for Landscape and Visual Impact Assessment, Third Edition

GVA	Gross Value Added
HER	Historic Environmental Record
HFCs	Sulphur hexafluoride
HGV	Heavy goods vehicle
HMSO	Her Majesty's Stationery Office
HRA	Habitat Regulation Assessment
IAQM	Institute of Air Quality Management
IBA	Incinerator Bottom Ash
ICE	Inventory of Carbon and Energy
IED	Industrial Emissions Directive
IEMA	Institute of Environmental Management and Assessment
INNS	Invasive Non-Native Species
IAQM	Institute of Air Quality Management
kV	Kilovolt
LCA	Landscape Character Area
LFA	Lead Flood Authority
LGV	Light Goods Vehicle
LLFA	Lead Local Flood Authority
LSOA	Lower Layer Super Output Area
LVIA	Landscape and Visual Impact Assessment
MAGIC	Multi-Agency Geographical Information for the Countryside
MHCLG	Ministry of Housing, Communities and Local Government
MW	Megawatts
MWe	Megawatts electric
N₂O	Nitrous oxide
NCA	National Character Area

NERC	The Natural Environmental and Rural Communities
NF₃	Nitrogen trifluoride
NGR	National Grid Reference
NHLE	National Heritage List for England
NO₂	Nitrogen Dioxide
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NTS	Non-Technical Summary
OS	Ordnance Survey
PEA	Preliminary Ecological Appraisal
PEI	Preliminary Environmental Information
PFCs	Perfluorocarbons
PM₁₀	Particulate matter
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SBC	Slough Borough Council
SF₆	Sulphur hexafluoride
SoCC	Statement of Community Consultation
SoS	Secretary of State
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage System
tCO_{2e}	Tonnes of carbon dioxide equivalent
UK	United Kingdom
UKBAP	UK Biodiversity Action Plan

UKCP18	UK Climate Projections 2018
WFD	Water Framework Directive
WTN	Waste Transfer Note
ZTV	Zone of Theoretical Visibility

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