

Indaver Rivenhall IWMF DCO

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure)

Regulations 2009

ENVIRONMENTAL STATEMENT [PINS Ref: EN0101038]

ES APPENDIX 5.1: EIA SCOPING REPORT

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Indaver Rivenhall Ltd

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Quod

EIA Scoping Report

Rivenhall IWMF
Development
Consent Order
Project

April 2023
Q220851

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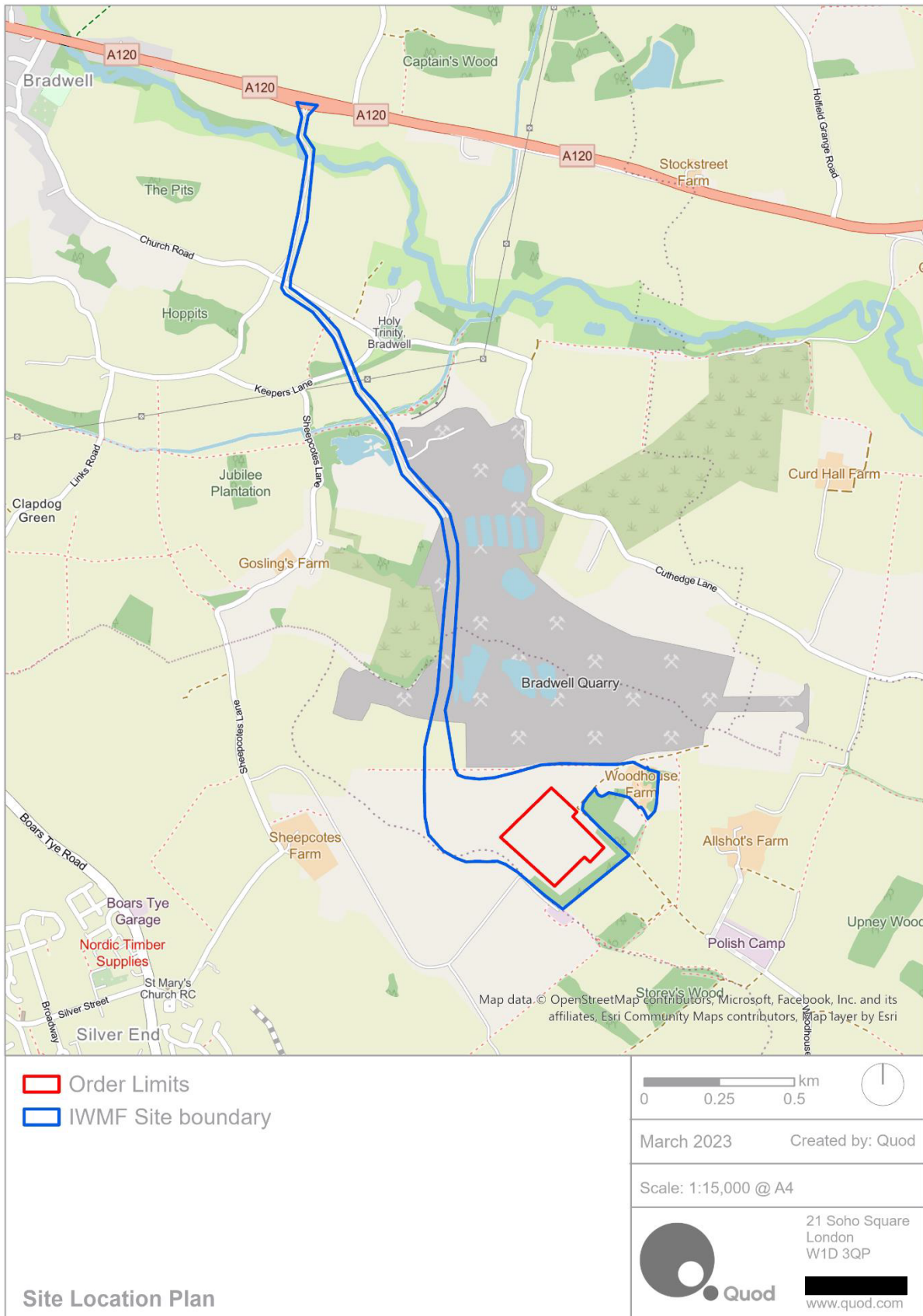
1 Introduction

1.1 Overview

- 1.1.1 This Scoping Report was prepared on behalf of Indaver Rivenhall Limited ('Applicant') for the Rivenhall Integrated Waste Management Facility ('IWMF') Development Consent Order ('DCO'). The Applicant intends to apply for a development consent order to increase the generating output of the consented Rivenhall IWMF ('Proposed Development'). As the generating capacity of the IWMF with the Proposed Development would exceed 50 megawatts ('MW'), development consent granted in the form of a DCO is required under Section 31 of the Planning Act 2008¹.
- 1.1.2 The development site ('Site') is located on part of the Rivenhall IWMF site ('IWMF Site') at the former Rivenhall airfield, east of Braintree. Figures 1.1 and 1.2 show the Site location and the likely extent of the Site boundary as well as the IWMF Site boundary. The Site is described further in Section 2.
- 1.1.3 The Rivenhall IWMF was granted planning permission¹ in February 2016 by Essex County Council ('ECC') under the Town and Country Planning Act 1990² ('TCPA'). This permission provides for the construction and installation of an IWMF that produces energy from waste ('EfW'), together with other waste management processes, with a generating output of up to 49.9 MW ('Consented Scheme'). Excavation works and enabling works are underway, including soil nailing and piling, and the EfW at the Consented Scheme is planned to be completed and commissioned by the end of 2025. The generating output of the Consented Scheme is controlled by governor valves which physically prevents the output exceeding 49.9MW. The Consented Scheme is described further in Section 2.
- 1.1.4 The Proposed Development proposes to improve the efficiency of the EfW at the IWMF, resulting in a generating capacity increase over 49.9 MW. This 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 would involve works to the governor valves to enable the capacity to exceed 49.9 MW.
- 1.1.5 The greater generating capacity would be achieved by optimising the design and operation of the boiler, steam turbine and generator to provide a greater rate of energy recovery and by undertaking the engineering operations described above. The use of more modern and enhanced technology would not require an increase in waste throughput or physical changes to the consented building envelope or external layout. The Proposed Development is described further in Section 3.

¹ Planning reference: ESS/34/15/BTE

Figure 1.1: Site Location Plan



1.2 Purpose

- 1.2.1 The purpose of this Scoping Report is to inform a request for an Environmental Impact Assessment ('EIA') Scoping Opinion from the Planning Inspectorate for the Proposed Development. This Report sets out the findings of an EIA scoping study and accompanies a request for a Scoping Opinion submitted to the Planning Inspectorate in accordance with Regulation 10(1) of the Infrastructure Planning (Environmental Impact) Regulations 2017³ ('EIA Regulations').
- 1.2.2 The content of this Report is set out in accordance with guidance provided by the Planning Inspectorate's Advice Note 7 'Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements'⁴. The suggested requirements identified in Advice Note 7 and details of where they are presented in this Scoping Report are outlined in Table 1.1.

Table 1.1: Requirements as per Advice Note 7

Information Requirement	Location of Information
<i>The Proposed Development</i>	
An explanation of the approach to addressing uncertainty where it remains in relation to elements of the Proposed Development (e.g. design parameters)	Sections 7 and 8
Referenced plans presented at an appropriate scale to convey clearly the information and all known features associated with the Proposed Development	Section 3
<i>EIA Approach and Topic Areas</i>	
An outline of the reasonable alternatives considered and the reasons for selecting the preferred option	Section 4
A summary table depicting each of the aspects and matters that are requested to be scoped out allowing for quick identification of issues	Table 6.2
A detailed description of the aspects and matters proposed to be scoped out of further assessment with justification provided	Section 9
Results of desktop and baseline studies where available and where relevant to the decision to scope in or out aspects or matters	Sections 7 - 9
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)	Sections 7 and 8
Any avoidance or mitigation measures proposed, how they may be secured and the anticipated residual effects	Sections 7 - 9
<i>Information Sources</i>	
References to any guidance and best practice to be relied upon	Sections 7 and 8

Evidence of agreements reached with consultation bodies (for example the statutory nature conservation bodies or local authorities)	Sections 7 and 8 and Appendix B
An outline of the structure of the proposed ES	Section 6.4; and Appendix A

1.2.3 In line with the EIA Regulations, this report identifies the Site location and extent, provides a description of the nature and purpose of the Development including its technical capacity, and an explanation of the likely significant effects of the Proposed Development on the environment. The report also outlines the proposed content, approach, and scope of the ES to be submitted with the application for development consent. The requirements of the EIA Regulations regarding the content of the ES are also covered within the contents tabulated in Appendix A.

1.3 Planning and EIA History

1.3.1 In August 2008, a planning application was submitted to ECC for the redevelopment of the former Rivenhall airfield to provide a new IWMF under the TCPA regime. Planning permission for the Rivenhall IWMF was granted by the Secretary of State in March 2010 ('2010 Permission')². The 2010 Permission was supported by an ES ('2008 ES') and an ES Addendum ('2009 ES Addendum') that provided additional environmental information for a public inquiry. The 2008 ES and 2009 ES Addendum were prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 1999 (as amended⁵).

1.3.2 Following the approval of some non-material amendment planning consents, a Section 73 ('S.73') application was submitted to ECC in July 2015 seeking modifications to 2010 Permission and discharge of certain planning conditions to enable construction works to commence. The S.73 application varied the list of consented drawings, slightly reduced the building size, modified a retaining wall design and provided for the access road realignment at the entrance to the IWMF building area. Planning permission for the S.73 was granted by ECC in February 2016, with subsequent non-material amendments ('2016 Permission')³. The 2016 Permission was implemented and is the operative permission for the Site. Relevant planning conditions associated with the 2016 Permission are listed in Appendix B.

1.3.3 The 2016 Permission was supported by the 'July 2015 EIA update' report and the 2015 ES Addendum ('2015 ES Addendum') that responded to a request from ECC and the Planning Inspectorate for further environmental information. The 2015 ES Addendum was prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended⁶). The environmental information that informed the 2016 Permission (i.e. the 2008 ES, 2009 ES Addendum and 2015 ES Addendum), are collectively termed the 'ES (as amended)'.

² 2010 Permission, planning reference: [ESS/37/08/BTE](#).

³ 2016 Permission, planning reference: [ESS/34/15/BTE](#), as amended by [ESS/34/15/BTE/NMA1](#), [ESS/34/15/BTE/NMA2](#), [ESS/34/15/BTE/NMA3](#) and [ESS/34/15/BTE/NMA4](#).

- 1.3.4 An Environmental Permit⁴ was issued in 2017 to operate an IWMF, including EfW facility, which utilised a 58m high stack above ground level (agl). An Environmental Permit Variation was issued in June 2020 for a reduced stack height (35m agl), revised abatement techniques and revised emission limits. This permit aligns to the stack height assessed in the 2015 ES Addendum and granted under the 2016 Permission.
- 1.3.5 Listed Building Consent (LBC)⁵ was also granted by Braintree District Council (BDC) to carry out repair and restoration works on Grade II listed Woodhouse Farm (shown on Figure 1.1) in September 2017. The LBC included consent for the installation of a visitor and education centre at Woodhouse Farm.

1.4 Legislative Context and Need for EIA

- 1.4.1 The Proposed Development is considered a 'Nationally Significant Infrastructure Project' ('NSIP') under Sections 14(1)(a) and 15(1)(2)(a) to (c) of the Planning Act 2008⁷ as an extension of an onshore generating station in England (i.e. the EfW facility), which (when extended) would have a capacity exceeding 50 MW.
- 1.4.2 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.
- 1.4.3 The Proposed Development is a 'Schedule 2' development. Paragraph 13(1) 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"*.
- 1.4.4 The generating station (i.e. EfW) is already authorised and is in the process of being executed (i.e. constructed). The Proposed Development comprises a change to or extension of the consented generating station and as such falls into Paragraph 13(1) of Schedule 2.
- 1.4.5 EIA is a systematic process that aims to prevent, reduce or offset the significant adverse environmental effects of development proposals and enhance beneficial effects. It ensures that planning decisions are made considering the likely significant

⁴ Environmental Permit reference: EPR/CP3906LP.

⁵ Planning reference: 15/01191/LBC.

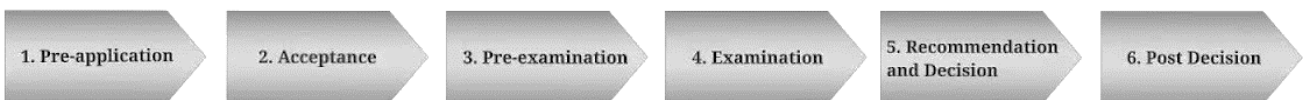
environmental effects and with engagement from statutory bodies and other stakeholders including the public.

- 1.4.6 This Scoping Report is submitted to the Planning Inspectorate as a formal notification to the Secretary of State under Regulation 8(1)(b) of the EIA Regulations that the Applicant proposes to provide an ES in respect of the Proposed Development described within this document.
- 1.4.7 Under Regulation 12(2)(b) of the EIA Regulations, a Preliminary Environmental Information Report (PEIR) will be produced and submitted to the Planning Inspectorate. This enables consultees (both specialist and non-specialist) to understand the likely environmental effects of the Proposed Development and will facilitate their consultation responses on the Proposed Development during the pre-application stage.
- 1.4.8 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. In accordance with Regulation 5(2)(a) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, the DCO application will be accompanied by an ES. This will provide an assessment of environmental topics *'based on'* the Scoping Opinion provided by the Planning Inspectorate and will be prepared by competent experts (see Section 1.5), in line with the EIA Regulations.

Consenting Process

- 1.4.9 The DCO process is comprised of six primary stages, as set out in Figure 1.3.

Figure 1.3: DCO Consenting Process



- 1.4.10 The EIA process is integral to all stages of the DCO process, with the ES providing environmental information on the project to the Planning Inspectorate that informs the pre-examination, examination and decision stages.

1.5 Applicant and Project Team

- 1.5.1 Indaver offers high-quality, sustainable and cost-efficient total waste management solutions to large scale industry and public authorities, both in the UK and Europe, with facilities and operations in Belgium, Germany, Ireland, UK, the Netherlands, Italy, France, Spain and Portugal. Through improved recycling and maximum recovery of energy and valuable components from waste, Indaver intends to keep leading the field in sustainable waste management.

1.5.2 In accordance with Regulation 14(4)(a) of the EIA Regulations, it is confirmed that this Scoping Report has been prepared by competent experts from the organisations listed in Table 1.4. These specialists will also undertake the EIA and their relevant expertise and qualifications will be stated within the ES.

Table 1.4: EIA Project Team

Role	Organisation
Applicant	Indaver Rivenhall Limited
Principal Designer and EPC Contractor	Hitachi Zosen Inova (HZI)
Planning Consultant EIA Coordinator	Quod
Climate Change and Greenhouse Gases	Fichtner Consulting Engineers
Noise	SLR Consulting

1.5.3 Quod will be the lead editor of the ES and author of non-technical chapters. Quod is a member of the Institute of Environmental Management and Assessment (IEMA) EIA Quality Mark Scheme, an accreditation scheme which sets high standards for EIA practice and demonstrates a commitment to excellence in EIA activities.

2 Existing Site and Consented Scheme

2.1 The Site and Setting

Site Location

- 2.1.1 Figures 1.1 and 1.2 show the Site's location and likely extent of the Site boundary. The Site is located east of Braintree, approximately 3km south east of Bradwell village, approximately 1km to the north east of Silver End and approximately 3km south west of Coggeshall. The Site covers an area of approximately 5.5ha. The National Grid Reference of the centre of the Site is TL 82336 20457.

Site Description

- 2.1.2 The Site is located within part of the IWMF Site, which is situated on land which was formerly part of Bradwell Quarry⁶. The Site is approximately rectangular in shape as it covers the extent of the consented IWMF building footprint, as defined by the 2016 Permission. The Site comprises bare made ground.
- 2.1.3 The topography at the Site is predominately flat and approximately 15m below ground level. This is lower than surrounding land due to the excavation of overburden and sand and gravel reserves undertaken at the IWMF Site as part of the former quarrying works. Subsequent restoration works placed overburden materials within the Site and IWMF Site. The ongoing construction of the Consented Scheme has resulted in further excavation works to the quarrying restoration activities, involving the removal of sand and gravel and excavation into the underlying London Clay to establish the foundation levels for the facility. Excavation, soil nailing and piling works are currently underway.

Surrounding Context

IWMF Site

- 2.1.4 The area of development of the IWMF Site is approximately 1.7km south of Coggeshall Road (A120). The majority of the IWMF Site comprises bare made ground following groundworks to landform the overburden placed at the IWMF Site as part of the quarry restoration works (Figure 1.2). Development platforms and access routes have been created through the construction area of the IWMF Site.
- 2.1.5 Woodhouse Farm and the associated structures have been retained. Areas of open habitat were established adjacent to Woodhouse Farm for Great Crested Newts and a hedgerow relocated. Peripheral trees, woodland/scrub has been retained along parts of the east and south eastern IWMF Site boundaries. A group of trees located immediately along the eastern and southern boundaries of the IWMF Site have a Tree Protection Order (TPO) and have been retained.

⁶ Planning reference: ESS/07/98/BTE.

Historical Uses

- 2.1.6 The IWMF Site is located within the confines of the former World War II (WWII) Rivenhall Airfield. Remnants of an aircraft hangar (two side-by-side lamella hangars), airfield buildings and associated runways were present on the Site until 2012 before clearance works were implemented under the 2010 Permission.

Surrounding Area

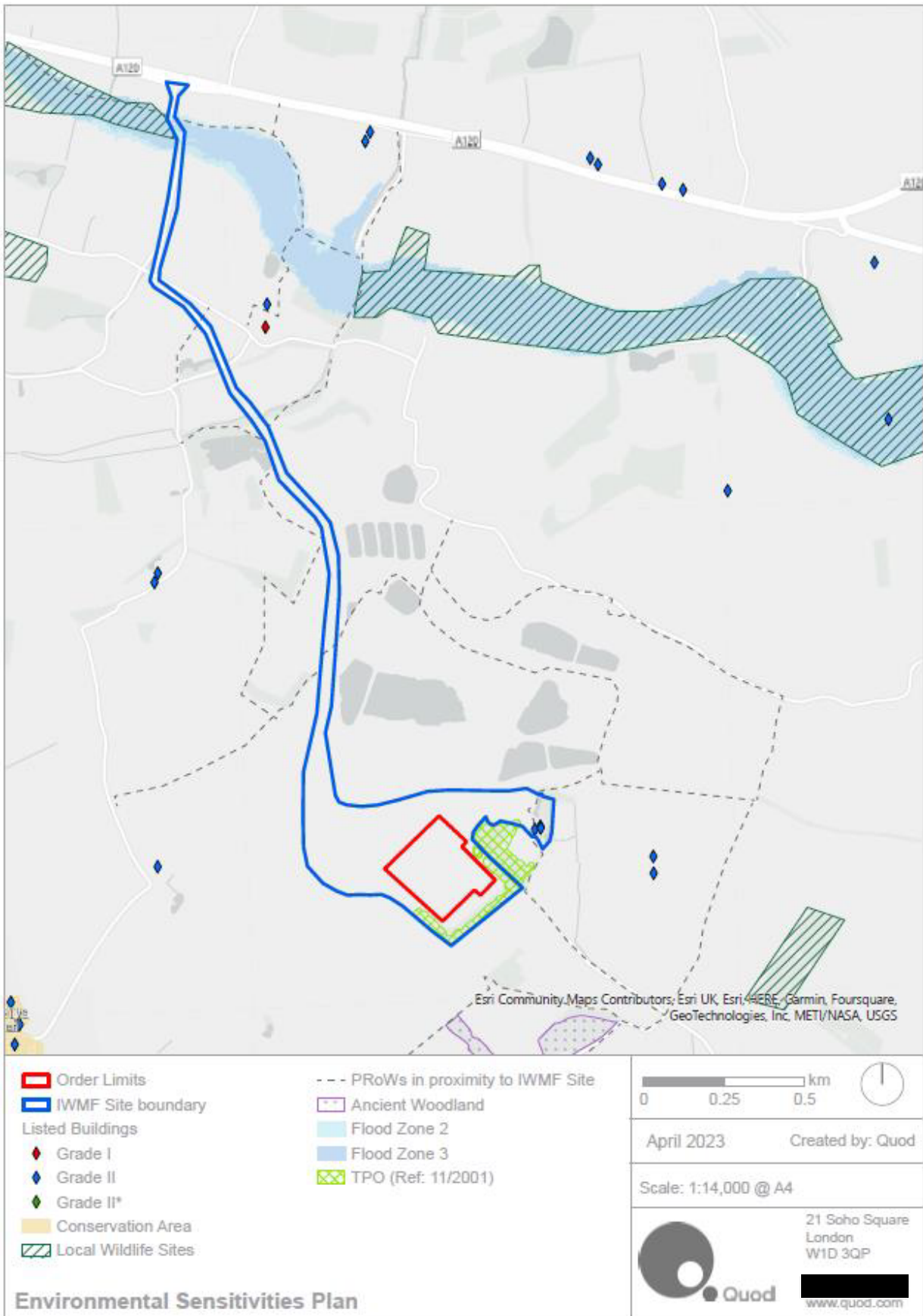
- 2.1.7 The access route to the Site from the north shares the existing Bradwell Quarry access onto the A120. This has junctions with Church Road and Ash Lane along its length and is a two-way road. Three Public Rights of Way (PRoW) north west of the Site transverse the access road and one passes through the eastern part of the Woodhouse Farm complex to the north east.
- 2.1.8 Except for the quarry, the Site is within a predominantly rural character area, consisting of arable crops in large fields, often without boundaries resulting in an open landscape. A small industrial estate is located approximately 400m to the south east on Allshots Farm. The landform around the Site forms a relatively flat plateau at approximately 50m Above Ordnance Datum (AOD), although the restored minerals workings to the north of the Site are at a lower level.
- 2.1.9 The nearest residential property is The Lodge, Woodhouse Lane, approximately 425m to the east of the Site. The only other residential property located within a 1km radius of the Site is Brick House, approximately 750m west of the Site boundary.

Environmental Sensitivities

- 2.1.10 Figure 2.1 identifies the key environmental sensitivities within and in close proximity to the Site.
- 2.1.11 The Site is not subject to any statutory or non-statutory designations for nature conservation or heritage. There are no World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Registered Battlefields or locally listed buildings within 1km of the Site boundary.
- 2.1.12 Two Grade II listed buildings associated with Woodhouse Farm are located approximately 180m north east of the Site, subject to the LBC associated with the Consented Scheme. An ecological mitigation area for Great Crested Newts associated with the IWMF quarrying works is located to the east of Woodhouse Farm (see paragraph 2.1.5)
- 2.1.13 There are three other Grade II Listed properties within a 1km radius of the Site, including Allshots Farmhouse, Allshots Barn (c.450m east) and Sheepcotes Farm (c.750m west). The Grade I listed Parish Church of the Holy Trinity is located approximately 300m east of the access road, 2km north of the Site.
- 2.1.14 The Site is not located within or in proximity to a Conservation Area. The closest is the Coggeshall Conservation Area located approximately 3.3km north east of the Site boundary.

- 2.1.15 The closest ecological designated sites are Storey's Wood Local Wildlife Site (LWS) and Upney Wood LWS approximately 290m south and 900m south east of the Site respectively. The closest statutory designated ecological site is Brockwell Meadows Local Nature Reserve (LNR) approximately 4.5km south east.
- 2.1.16 Based on the Environment Agency flood maps, the Site is shown to be located within Flood Zone 1 (low probability of fluvial flooding) and has a low probability of surface water flooding.
- 2.1.17 There is no Air Quality Management Area (AQMA) on or in the vicinity of the Site.

Figure 2.1: Environmental Sensitivities



2.2 Consented Scheme

Overview

2.2.1 The Consented Scheme is defined as follows:

“Integrated Waste Management Facility comprising: Anaerobic Digestion Plant treating mixed organic waste, producing biogas converted to electricity through biogas generators; Materials Recovery Facility for mixed dry recyclable waste to recover materials e.g. paper, plastic, metals; Mechanical Biological Treatment facility for the treatment of residual municipal and residual commercial and industrial wastes to produce a solid recovered fuel; De-inking and Pulping Paper Recycling Facility to reclaim paper; Combined Heat and Power Plant (CHP) utilising solid recovered fuel to produce electricity, heat and steam; extraction of minerals to enable buildings to be partially sunken below ground level within the resulting void; visitor/education centre; extension to existing access road; provision of offices and vehicle parking; and associated engineering works and storage tanks.”

2.2.2 In summary, the planning permission for the IWMF comprises the following components:

- a reception hall;
- a materials recovery facility;
- a mechanical biological treatment plant;
- an anaerobic digestion facility;
- a paper pulping plant;
- a waste water treatment plant;
- a combined heat and power plant (i.e. the EfW); and
- a biogas energy plant.

2.2.3 The Consented Scheme also comprises restoration works to Woodhouse Farm buildings as an educational visitor centre, with space for a heritage area for the WWII airfield. Associated car and coach parking for the public would also be provided.

2.2.4 The construction work is being undertaken by the Engineering, Procurement and Construction (EPC) contractor Hitachi Zosen Inova (HZI), Hegarty and Tom Blackwell Ltd. The first phase of the Consented Scheme, i.e. completion of the EfW plant, will be completed and commissioned by 2025.

Combustion and Energy Generation Process

2.2.5 Figure 2.2 illustrates the full combustion and energy generation process in the reception hall and EfW. More specifically, Figure 2.3 illustrates the waste process line and Figure 2.4 illustrates the electricity generation line.

Figure 2.2: Full Combustion and Energy Generation Process Flow

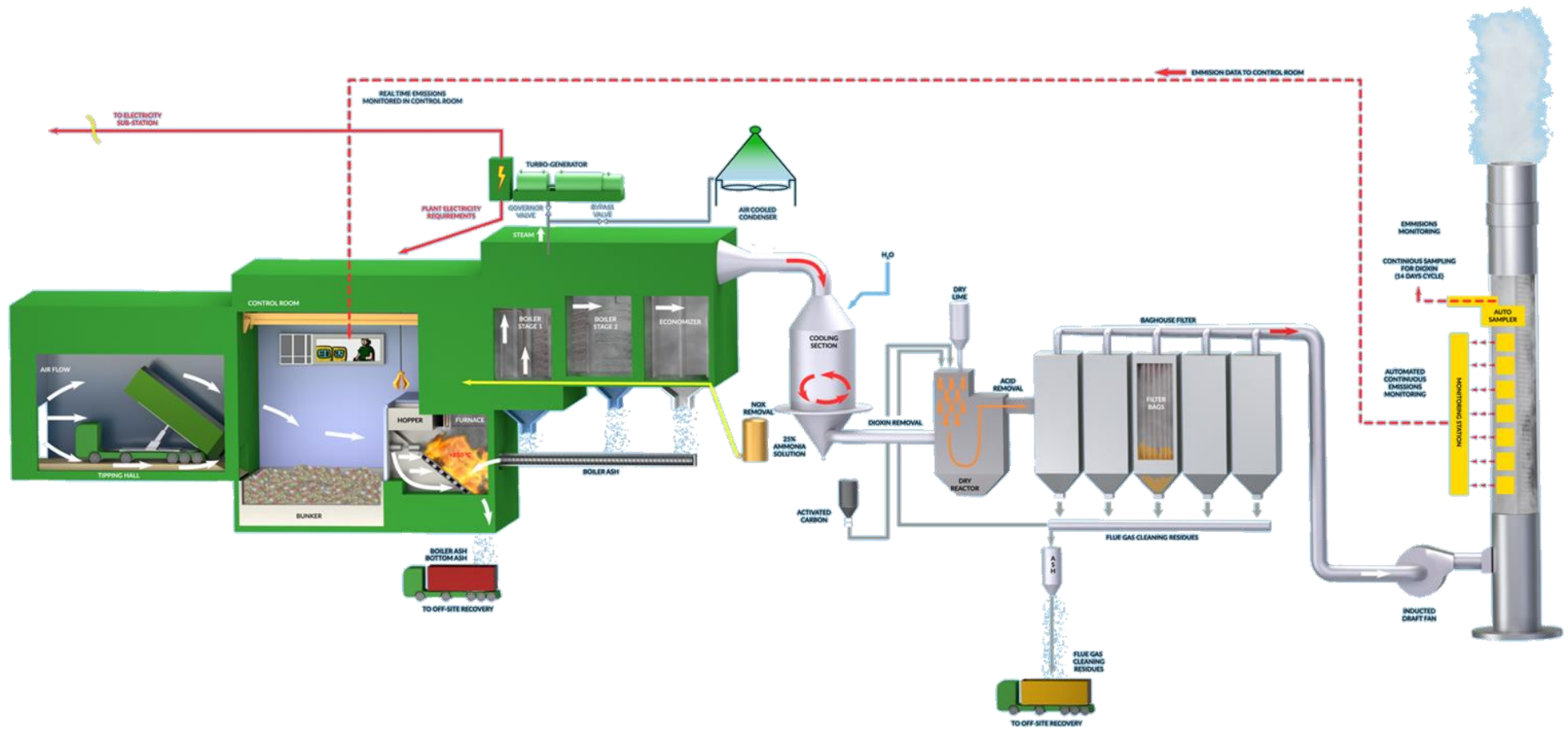


Figure 2.3: Waste Process Line

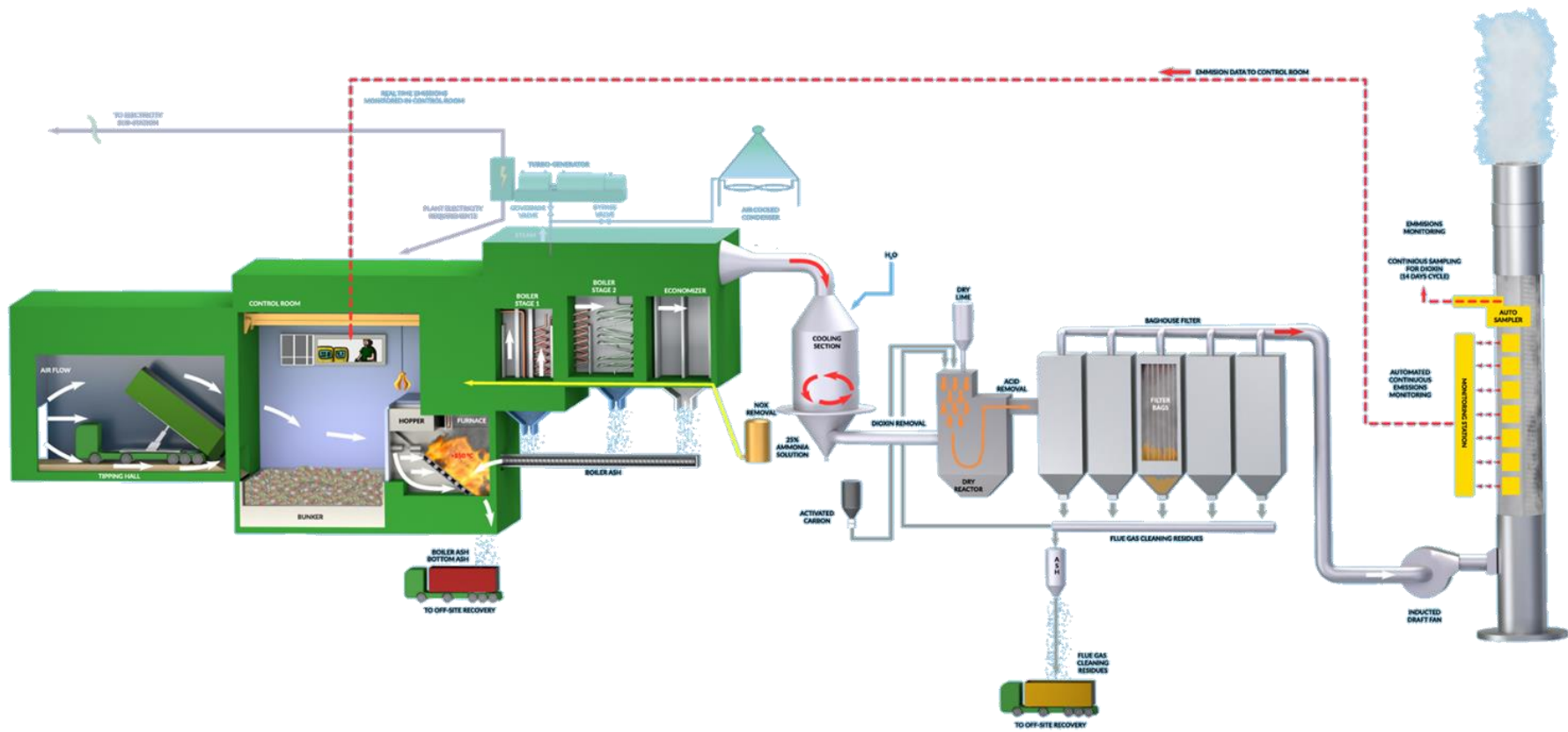
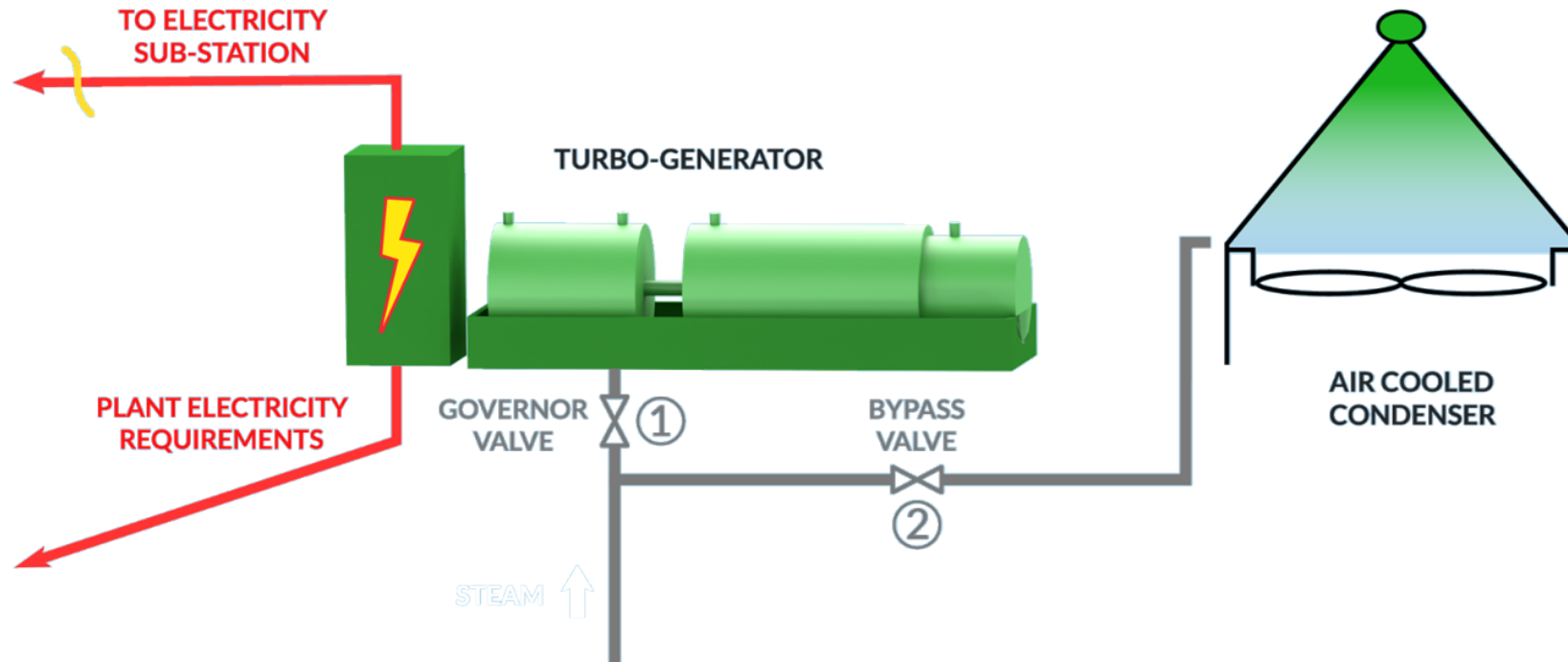


Figure 2.4: Electricity Generation Line



- 2.2.6 Waste is delivered to the reception hall, tipped into a bunker and then transferred from the bunker to the furnace, where it is combusted. Air for combustion is extracted from the reception hall and bunker to avoid the release of odours.
- 2.2.7 The combustion of waste leads to the generation of hot flue gases, which are maintained at more than 850°C for more than two seconds to ensure full combustion. The hot flue gases pass through the boiler where the heat is used to generate high pressure steam. The cooled flue gases are then passed through a comprehensive flue gas treatment system, which reduces the concentrations of pollutants in the flue gases to well below the permitted emission levels before the cleaned flue gases are released to atmosphere via a stack.
- 2.2.8 The steam is sent to a steam turbine to generate electricity. The high pressure, high temperature steam expands and cools as it passes through the turbine and becomes low pressure steam. Then, this low pressure steam is condensed to water in the air-cooled condenser. The water is returned to the boiler to be turned into high pressure steam again. Water would be recirculated with no external discharge from the IWMF building.
- 2.2.9 Once constructed and operational, the Consented Scheme will create electrical output of up to 49.9 MW.
- 2.2.10 Two lagoons have been created for water storage. ‘New Field Lagoon’ was created in association with the adjacent quarrying activities, to the north of the Site. ‘Upper Lagoon’ has been created to enable water to be abstracted and stored for the Proposed Development. Figure 2.5 shows layout of the Consented Scheme.
- 2.2.11 As set out above, the 2016 Permission has been implemented, with excavation works and construction of retaining walls underway.

Figure 2.5: Layout of the Consented Scheme



Building Envelope and Appearance

- 2.2.12 The Consented Scheme buildings will be steel framed, with darkly coloured profiled metal cladding and a horizontal profile. The low-profiled roof will be double-arched to reflect the design of the former WWII hangers on the Site. This will be vegetated to provide a green roof that will enhance biodiversity and optimise drainage. A 7m diameter stainless steel chimney will extend 35m agl.

Grid Connection

- 2.2.13 The Applicant has entered into a contract with UKPN in respect of the 132kV grid connection for the Consented Scheme. The connection will run along the access road from the IWMF Site as far as Ash Lane and then the route follows various minor roads to the Braintree substation. Permitted development rights under Class B(a) Development by an Electricity Undertaking under Part 15 of the Town and Country Planning (General Permitted Development) (England) Order 2015 permit statutory undertakers, such as UKPN, to lay such a connection underground in public highway or other open ground.

Engineering Works

- 2.2.14 The major engineering works to be completed to date for the Consented Scheme have been associated with excavation, soil nailing and piling works.
- 2.2.15 The construction of the Consented Scheme resulted in further excavation works to the quarrying restoration activities, involving the removal of sand and gravel and excavation into the underlying London Clay to establish the foundation levels for the facility. This was undertaken to minimise visual impacts.

Waste Inputs, Processing and Residues

- 2.2.16 The Consented Scheme will receive a variety of wastes and process them through a number of waste treatment routes:
- Recyclable materials received at the Site would be sorted in a materials recovery facility; to separate out metals, plastics, paper and card, and glass for re-use or disposal as appropriate;
 - Mixed organic wastes (MOWs) received would be processed in an anaerobic digestion plant;
 - A mechanical biological treatment plant would treat a combination of municipal solid wastes (MSWs) and commercial and industrial (C&I) wastes received to generate solid recovered fuel (SRF); and
 - Imported SRF, alongside any SRF generated by the mechanical biological treatment plant and any paper pulp residues generated by the paper pulping plant, would be used by an EfW plant to generate energy.
- 2.2.17 Condition 29 of the 2016 Permission limits to the total waste inputs of the scheme to a maximum of 853,000 tonnes per annum of municipal solid waste and commercial and industrial waste. The total waste inputs would not be changed by

this proposal. The EfW plant can combust 595,000 tonnes of waste per annum and generate no more than 49.9 MWe.

- 2.2.18 Unloading of waste will take place within reception halls in a controlled environment created using appropriate airflow management. Roller shutter doors will close automatically when not in use to minimise potential nuisance emissions such as dust and odour. The building is designed to control and minimise any potential dust and noise emissions.
- 2.2.19 Re-useable recyclate that may be produced will be transported off-site and reintroduced into the secondary materials market. Ash and air pollution control residues from the EfW plant will also be transported off-site for processing into secondary aggregate materials.

Water Management

- 2.2.20 Water is required by the IWMF to operate a number of operational elements such as boilers or sprinklers. There is no discharge of process water or trade effluent from the facility. An existing 150mm diameter mains water connection provides mains water supply to the Site.

Landscaping

- 2.2.21 The majority of the IWMF Site is clear of vegetation due to the former quarrying activities. Existing bands of trees line the north eastern, south eastern and south western borders of the IWMF building. These are proposed to be retained and enhanced with additional areas of mixed woodland planting to the north and north west. In addition, proposed areas of mixed shrub or grassland planting will be implemented along the access road.
- 2.2.22 The areas of existing woodland surrounding Woodhouse Farm will also be retained and enhanced, with planting and landscaping works to be carried out along the western boundary of Woodhouse Farm to screen the proposed visitor and coach park from the IWMF building.
- 2.2.23 Condition 54 of the 2016 Permission has been discharged, with a Habitat Management Plan agreed for the IWMF Site. This sets the framework for the reestablishment of landscape and biodiversity features on the IWMF Site, including management and monitoring procedures to ensure these features remain at a favourable conservation status. Key principles of mitigation and management are as follows:
- retention of an area of approximately 1.44ha of broad-leaved semi-natural woodland in the south eastern area of the IWMF Site;
 - creation of new bands of broad-leaved semi-natural woodland around the perimeter of the IWMF building, with additional tree planting to the south east outside the IWMF Site;
 - c.2km of native hedgerow planting along the proposed access road extension and around parking areas and paths within the IWMF Site;

- creation of areas of new species-rich grassland within the IWMF Site;
- creation of new surface water bodies within the IWMF Site;
- provision of a sedum-based green roof on the IWMF building; and
- provision of bat boxes to increase provision of bat roosting habitat.

2.2.24 A TPO consent was granted in December 2021 (ref: 21/03318/TPO) and works have been carried out to remove dangerous, damaged and diseased trees, along with other woodland management activities. Around 2,000 trees and shrubs have been planted along the southern boundary of the Site, and landscaping works are underway across the rest of the Site. Ultimately around 30,000 trees and shrubs will be planted.

Drainage

2.2.25 Conditions 22 and 23 have been discharged providing details of the foul and surface water drainage strategy for the Consented Scheme respectively.

2.2.26 Two surface water collection lagoons have been developed as part of the drainage and water use strategy for the Consented Scheme.

2.2.27 Upper Lagoon is a large freshwater storage area located c.40m north west of the IWMF building. This has been constructed below ground level to collect and store water from rainfall and surface water runoff, groundwater and treated water from operation of the Consented Scheme. New Field Lagoon, located approximately 500m north west of the IWMF building, will have an average volume of 190,000m³ and be capable of supporting a water abstraction of up to 5,000m³ a month. This will act as an additional surface water resource to be pumped to Upper Lagoon when necessary. These would not be changed by the Proposed Development.

Access and Parking

2.2.28 Access to the Site is from the A120, via the access route to Bradwell Quarry that was constructed for sand and gravel operations. The Consented Scheme made provision for this to be extended, realigned and upgraded through discharge of Condition 6, with improvements to existing crossing points discharged under Conditions 31 and 63.

2.2.29 Car and coach parking provision is provided adjacent to the nearby Woodhouse Farm complex. Details of this have been discharged under Condition 61.

2.2.30 Heavy Goods Vehicles (HGV) will enter the IWMF building in the reception hall to unload residual wastes and load residues. This is in the approximate centre of the building and extends broadly north east/south west across the extent, with access off the Site access road.

Traffic Movements

2.2.31 Condition 3 limits the daily number of HGV trips arriving at the Site to a maximum of 404 movements during operational weekdays and 202 movements on Saturdays.

The total number of vehicle movements would not be changed by the Proposed Development.

Construction of Consented Scheme

Construction Activities and Controls

- 2.2.32 Construction works comprise levelling of the IWMF Site, creation and upgrading of proposed access roads, formation of proposed lagoons, construction of the IWMF building, installation of the grid connection, associated facilities and parking (including the visitor centre and education centre), and landscaping.
- 2.2.33 Condition 20 has been discharged which sets out details of the proposed construction compound for the Consented Scheme. Car parking is located approximately 75m to the north of the Site.
- 2.2.34 Conditions 34 - 36 control the permitted hours of construction vehicle movements. During the construction phase, the hours of work are 07:00 to 19:00, seven days a week. Total numbers of construction vehicle movements are controlled by Condition 4, stipulating that the total number of HGV vehicle movements (including deliveries of building materials) when combined with the maximum permitted vehicle movements under Condition 3 shall not exceed 404 movements per day (Monday to Sunday). These limits would not be changed by the Proposed Development.
- 2.2.35 Construction lighting details have been agreed with the Waste Planning Authority (WPA) through the discharge of Condition 43. The construction lighting scheme comprises 6m high lighting columns within the main construction area, with additional low level lighting around the accommodation compound. No construction lighting shall exceed 5 lux average luminance. During construction of the IWMF, lighting will not be illuminated outside the hours of 0700 and 1900 Monday to Sunday, and at no time on Bank or Public Holidays except for security and safety lighting activated by sensors. These limits would not be changed by the Proposed Development.
- 2.2.36 Details of construction dust mitigation and odour control for the Consented Scheme have been discharged through Conditions 51(a) and 52(a). In relation to construction of the IWMF, the use of water spraying will be in operation in working areas and on the site access road. Construction vehicle traffic will be required to adhere to speed limits to minimise dust nuisance. Any other construction operations likely to cause dust or odour nuisance, will be carried out in accordance with site specific method statements and risk assessments to assure the control and mitigation at the point of source.

Construction Environmental Management Plan

- 2.2.37 A Construction Environmental Management Plan (CEMP) defines the site-specific construction management and mitigation measures to be applied to reduce the potential for significant environmental effects.

2.2.38 A CEMP has been prepared by the contractor for the initial phases of the Consented Scheme in March 2022. This set out mitigation and management measures to protect the environment and health and welfare of the workforce, and ensure sustainable delivery of the construction works. Details of construction works, access, car parking, emergency response procedures and site-specific environmental measures are provided.

Consented Scheme Operational Activities

2.2.39 As set out above, the operational IWMF would involve the processing and treatment of wastes, and combustion of these wastes to generate hot flues gasses and generate electricity.

2.2.40 The permitted hours of operation for the receipt of incoming waste and departure of outgoing recycled, composted materials, ash and residues etc. are 07:00 to 18:30 Monday to Friday and 07:00 to 13:00 Saturday with no normal deliveries on Sundays and Public Holidays, as controlled by Condition 3. The permitted hours allow potential deliveries from ECC's Waste Disposal Authority (WDA) outside of these hours. These limits would not be changed by the Proposed Development.

2.2.41 The internal operational processes of the Consented Scheme will be operated on a 24-hour basis.

Environmental Monitoring

2.2.42 Once operational, an emissions monitoring programme will be implemented to monitor and control the Consented Scheme under a range of operation conditions. Aspects to be monitored include air quality and dust, odour, surface and groundwater, and waste. Continuous, daily, weekly, monthly, biannual and annual monitoring regimes will be implemented depending on environmental aspect being monitored, as agreed with the Environment Agency in accordance with the Environmental Permit and Local Planning Authority via the relevant planning conditions.

Decommissioning of Consented Scheme

2.2.43 The Environmental Permit application included a commitment to prepare a Closure Plan at the appropriate time and included a list of generic measures to be considered in the Closure Plan.

3 Description of the Proposed Development

3.1 Overview of the DCO Application

Proposed Development

- 3.1.1 At present, the Consented Scheme is restricted to the generation of up to 49.9 MW of electricity. Due to improvements in plant design since the 2016 Permission, it is now possible for more than 49.9 MW of electricity to be generated from the same amount of waste with the installation of different plant.
- 3.1.2 The Proposed Development would extend the generating capacity in excess of 50 MW by the implementation of an engineering operation to allow a greater proportion of steam to reach the electricity-generating turbine. The Proposed Development would only comprise engineering works carried out internally within the consented IWMF building.
- 3.1.3 This would be completed through the implementation of one of two work options. Both options would be consented through the DCO. The work option implemented would depend on the timing of the granting of the DCO relative to the installation and commissioning phases of the Consented Scheme. The difference between the two work options is that Work No.1 involves the removal of limited governor valves installed under the 2016 Permission and the installation of unlimited valves whilst Work No.2 would allow unlimited valves to be installed without any limited valves having been installed first:
- **Work No.1** – an extension to the Rivenhall IWMF with the effect that, once extended, the waste management facility will have a gross installed generating capacity in exceedance of 50 MW, comprising mechanical modifications to the governor valves to allow steam capacity to be increased.
 - **Work No.2** – an extension to the Rivenhall IWMF with the effect that, once extended, the waste management facility will have a gross installed generating capacity in exceedance of 50 MW, comprising installation of unrestricted governor valves.
- 3.1.4 Once installed and commissioned, it is anticipated that the likely generating capacity of the facility would be approximately 65 MW; this value may potentially alter during design development and operation.
- 3.1.5 For the purposes of the EIA, the Proposed Development will be defined by detailed planning drawing(s) submitted with the application.

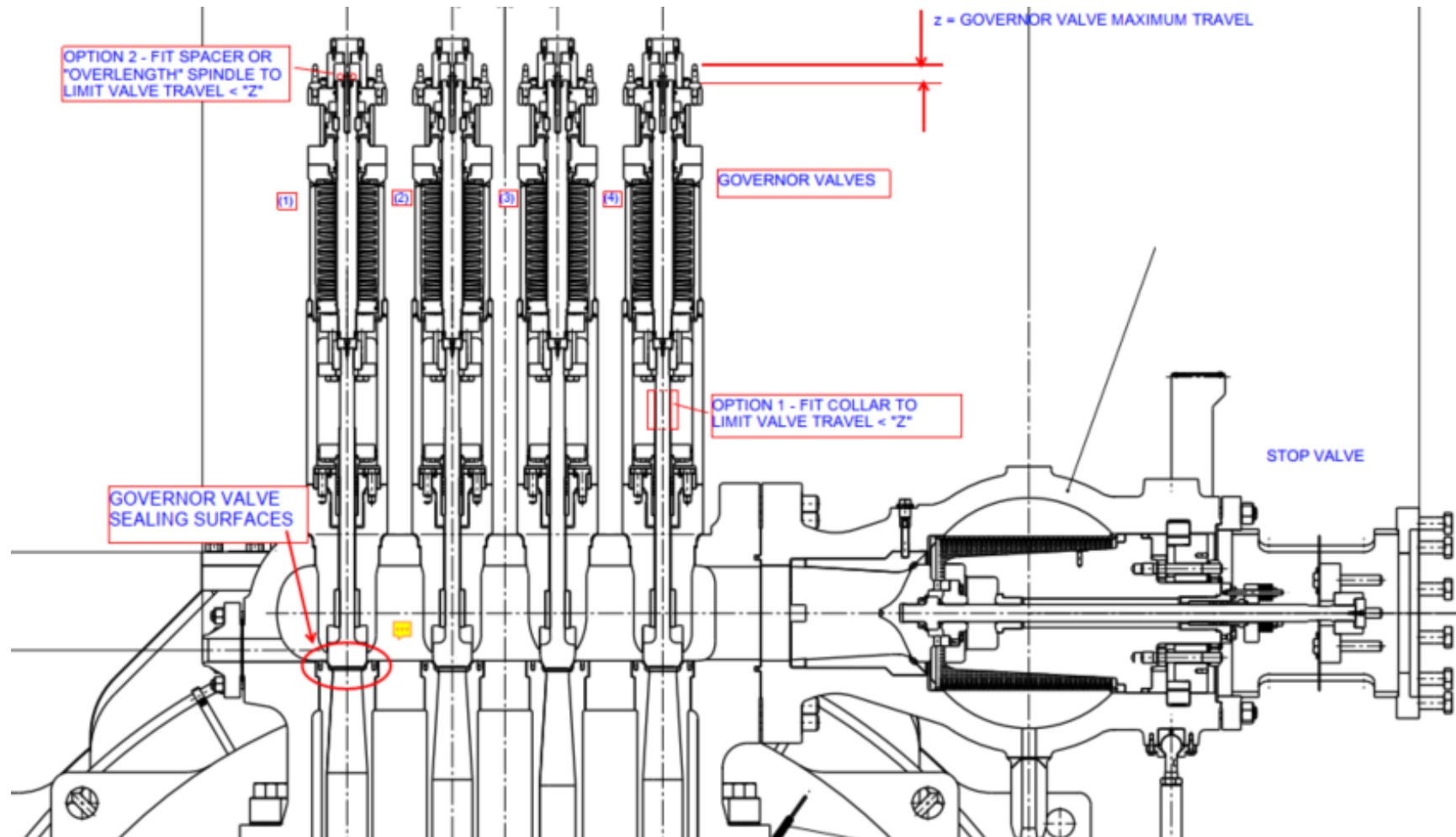
Context

- 3.1.6 The EfW in the Consented Scheme produces electricity by feeding steam into a turbine that powers a generator. The steam is generated by passing hot flue gases produced by the combustion of waste through a boiler, which heats water to produce high pressure steam whilst simultaneously cooling the flue gases. The flue gases

are sent through a comprehensive flue gas treatment system to reduce the concentration of pollutants to well below the permitted emission levels, before they are released to the atmosphere through a stack. This process would not change as a result of the Proposed Development.

- 3.1.7 The steam produced by the boiler is either: i) fed into the turbine; or ii) is cooled and condensed back into water in an aero-condenser and recirculated into the boiler to be re-heated by the hot flue gases without entering the turbine. Energy can only be extracted from steam that is sent to the turbine. The condensation and recirculation of steam back to the boiler does not generate electrical energy.
- 3.1.8 Steam turbine power output is determined by the opening of the steam turbine governing valves which are located immediately upstream of (i.e. before) the first stage of turbine rotating blades. Each turbine supplier has their own particular governor valve design, but the general principles are similar across all manufacturers. A typical steam turbine control valve arrangement is shown in Figure 3.1.

Figure 3.1: Governor Valve Arrangements



- 3.1.9 Whether the steam is fed into the turbine or recirculated is controlled by a set of four governor valves. The Consented Scheme includes mechanical stops in the governor valves to ensure the amount of steam sent to the turbine is physically limited such that turbine can never generate more than 50 MW of electricity. Any 'residual' steam not sent to the turbine is recondensed and recirculated through the boiler.
- 3.1.10 The Proposed Development seeks permission to remove the mechanical stops from the governor valves and/or to install governor valves without a mechanical stop so as to allow a greater volume of the steam generated by the boiler to be sent to the turbine. This would allow the turbine to run more efficiently and generate over 50 MW due to the increased volume of steam being fed into the turbine.
- 3.1.11 There is no increase to the total amount of steam that is generated by the IWMF, only in the volume of steam that would be allowed go to the turbine. As there is no additional throughput and combustion of waste required to achieve this uplift in generating capacity, the total amount of steam generated by the IWMF does not change, only where that steam is directed.
- 3.1.12 Any necessary variations to environmental permits and/or consents will be sought outside of the scope of the DCO application.

Engineering Works

- 3.1.13 Under Work No.1, the removal of the mechanical stops from the governor valves would involve an engineering operation that requires the Consented Scheme to temporarily pause operations for qualified engineers to remove the relevant components. This would result in the extension of the generating station capacity to above 50 MW.
- 3.1.14 Under Work No. 2, the installation of governor valves which are not limited through mechanical stops would involve an engineering operation that requires qualified engineers to work on the EfW otherwise installed in accordance with the Consented Scheme. This would result in the extension of the generating station capacity to above 50 MW.
- 3.1.15 The engineering operation would be carried out within the consented IWMF building. There would be no change to any component of the external appearance of the Consented Scheme. This includes the height of the consented stack. It also includes any landscape planting, tree retention or habitat management that forms part of the Consented Scheme – all of which remain unaffected and unchanged by the DCO proposals.

Grid Connection

- 3.1.16 The Proposed Development requires a connection to the Local Distribution Network to provide electricity back into the UK power network. As set out previously, a grid connection is being implemented to connect the IWMF to the existing UKPN substation at Braintree for connection to the national electricity grid. This is unchanged by the Proposed Development as there is sufficient capacity in this connection to support the increase in electrical output.

Building Envelope and Appearance

- 3.1.17 The Proposed Development solely comprises an upgrade to internal machinery associated with the IWMF. As such, it does not necessitate any changes to the external massing or structure of the façade of the Consented Scheme.

Waste Inputs, Processing and Residues

- 3.1.18 No changes to the quantity of the waste being received by the IWMF (i.e. waste inputs), the processing of the waste, nor the residues from the IWMF will occur due to the Proposed Development.

Water Management

- 3.1.19 The Proposed Development will utilise the same cooling tower and associated pumps as the Consented Scheme. The quantity of blowdown/evaporation will be unchanged or less in comparison to the Consented Scheme as more heat will be used by the Proposed Development to generate electricity. Water demand and usage will be unchanged to the Consented Scheme.

Landscaping

- 3.1.20 With the Proposed Development solely comprising internal works, there are no changes proposed to the external landscaping scheme defined for the Consented Scheme.

Drainage

- 3.1.21 The Proposed Development has no impact on the consented drainage strategy, with no material impact on water demand and outputs. The lagoons and other aspects of the drainage strategy remain unchanged to that defined by the Consented Scheme.

Access and Parking

- 3.1.22 As there would be no change to the quantum of waste input to the IWMF, the Proposed Development does not necessitate a change to the site access or parking requirements. These details remain as per the Consented Scheme.

Traffic Movements and Hours of Operation

- 3.1.23 There will be no change to the consented hours of operation or the permitted number of vehicle movements associated with the construction or operation of the Proposed Development to that permitted under the Consented Scheme.

3.2 Construction

Construction Activities and Programme

- 3.2.1 At this stage, construction works associated with integrating the Proposed Development into the Consented Scheme are expected to be carried out in Quarter (Q) 2 2024 and take approximately one to two weeks.

Construction Environmental Management Plan

- 3.2.2 The Applicant has committed to undertaking construction works in line with a CEMP as a means of avoiding, reducing or mitigating potential adverse effects of construction on the environment and local community. The CEMP will take account of any necessary logistical and noise attenuation measures required to mitigate potential adverse effects during implementation and secured through an appropriate planning condition.

3.3 Operational Activities

- 3.3.1 The Proposed Development would utilise the same waste types and throughput approved for the Consented Scheme. It is envisaged that the Proposed Development operation will be a continuous process unchanged from the Consented Scheme, operating twenty-four hours per day, seven days per week, with permitted hours for the receipt of incoming waste and departure of outgoing recycled, composted materials, ash and residues in-line with those stipulated by Condition 3.
- 3.3.2 Once operational, the Proposed Development would not result in a change in staffing demand for operation and monitoring relative to that required for the operation of this element of the Consented Scheme.

3.4 Decommissioning

- 3.4.1 Decommissioning activities associated with the Proposed Development solely comprise the removal of the engineering components proposed for within the IWMF through this application. Any relevant controls associated with decommissioning activities of the Consented Scheme would be replicated by the DCO. Any decommissioning activities associated with other elements of the Consented Scheme are outside the scope of this application.
- 3.4.2 Decommissioning would be subject to regulatory control through the Permit in the form of a Closure Plan. 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. The bulk of the plant and equipment is likely to have some limited residual value as scrap or recyclable materials.
- 3.4.3 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. It is considered highly unlikely that the Proposed Development will create any new areas of ground contamination.

4 Alternatives

4.1 Reasonable Alternatives Considered

- 4.1.1 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 Development.
- 4.1.2 Given implementation of the Consented Scheme which is under construction, alternatives of site location, designs, and layouts are not relevant for consideration in the ES.
- 4.1.3 The reasonable alternatives that will be considered in the ES are:
- implementation of the Consented Scheme (i.e. 'no Proposed Development');
 - an electricity generation capacity less than that proposed to be assessed in the ES, i.e. less than c.65 MW;
 - an electricity generation capacity greater than that proposed to be assessed in the ES, i.e. greater than c.65 MW; and
 - other engineering operations, including different engineering solutions.
- 4.1.4 The reasoning for selecting the preferred option (i.e. the Proposed Development) is that it provides the optimal solution for electrical generation at the facility.

5 Consultation

5.1 Context

5.1.1 Effective stakeholder engagement and consultation is central to the DCO process and informing the EIA. Feedback from statutory and non-statutory consultees assists in refining the scope of environmental assessment and identifying specific issues that could require further investigation. Consultation is an ongoing process in the pre-application phase, which enables mitigation measures to be incorporated into the design of the Proposed Development to mitigate potential adverse effects and enhance environmental benefits.

5.2 DCO Consultation Requirements

5.2.1 As part of the Applicant's pre-application consultation duties, a Statement of Community Consultation (SoCC) is being prepared in consultation with Braintree District Council (BDC) and Essex County Council (ECC). This will detail how the Applicant intends to publicise and consult on a Preliminary Environmental Information Report (PEIR), as per Regulation 12 of the EIA Regulations.

5.3 Consultation to Date

5.3.1 The Applicant has established a Site Liaison Group that comprises members of BDC, ECC, and local Parish Councils. The Group convenes on a quarterly basis to receive updates on the progress of the construction of the IWMF. The Applicant has used this forum to update the Group on the Proposed Development and the DCO process on 08 December 2022 and 16 March 2023.

5.3.2 The Applicant has also met with Officers from BDC and ECC to informally consult on the preparation of the SoCC and provide and update on the progress of the DCO application. Meetings are held monthly, and started in December 2022.

5.3.3 The Applicant met with officers from the Planning Inspectorate on 11 November 2021, 12 January 2023 and 7 March 2023. Meeting notes, produced by the Planning Inspectorate, are available on the PINS website⁷.

5.4 Scoping Consultation

5.4.1 The Planning Inspectorate will consult on this EIA Scoping Report under the EIA Regulations. Views from statutory and relevant non-statutory consultees will be considered and used to inform the Scoping Opinion to be issued by the Planning Inspectorate.

⁷ <https://infrastructure.planninginspectorate.gov.uk/projects/eastern/rivenhall-iwmf-and-energy-centre/?ipcsection=advice>

5.4.2 Regulation 10(6) of the EIA Regulations requires the Planning Inspectorate to consult with the statutory consultation bodies, including environmental bodies (such as the Environment Agency) and relevant planning authorities (including ECC and BDC), before adopting a Scoping Opinion.

6 EIA Methodology

6.1 Introduction

6.1.1 The ES will be prepared in compliance with the EIA Regulations. Reference will also be made to current EIA good practice guidance. This section outlines the general approach to the EIA process.

6.2 General Approach

6.2.1 The following processes will inform the assessment of potential environmental effects presented in the ES:

- review of relevant legislation and local, regional and national planning policies and guidance relevant to the EIA;
- review of existing relevant environmental information associated with the Consented Scheme, including environmental appraisals completed to-date, environmental monitoring results associated with planning conditions and the environmental permit;
- review of publicly available environmental information;
- consultation with statutory and non-statutory consultees relevant to the EIA process;
- desktop studies, surveys and monitoring; and
- computer modelling.

6.2.2 The ES will set out the processes followed during the EIA, including the methods used for the collection of data and for the identification and assessment of potential effects. Any uncertainties, limitations or assumptions made will be clearly identified.

6.2.3 Impacts will be considered based on their magnitude, duration, and reversibility. Cumulative effects will be considered where appropriate. Significance will be evaluated based on 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 6.4.

6.2.4 Where potentially significant adverse environmental effects are identified in the assessment process, measures to mitigate these effects will be consulted on with the relevant statutory bodies and agreed to be undertaken as part of the project development as far as practicable.

Basis of Assessment and Assessment Scenarios

6.2.5 Implementation of the Proposed Development will only be possible once the EfW in the Consented Scheme is constructed (other than the installation of the governor valves themselves in the event that Work No. 2 is to be carried out). Therefore, the ES will be based on a 'Future Baseline Scenario', this being the future date at which

the EfW in the Consented Scheme is ready for operation. This would require all elements of the Consented Scheme outside of the consented IWMF building to have been constructed and for the relevant part of the IWMF building to have been fully constructed.

- 6.2.6 It is proposed to use an approach similar to that used by the Slough Multifuel Extension Project ('SMEP'). The SMEP EIA Scoping Report⁸ proposed to use a 'Future Baseline Scenario' which assumes the TCPA-consented 50 MW facility is constructed and operational. The topic assessments were proportionate in that they proposed to assess the incremental changes arising from the extension project proposals (i.e. a 60 MW output) compared to the consented facility. The SMEP scoping approach was accepted by PINS in their Scoping Opinion⁹ (dated December 2021). The SMEP development consent application has since been accepted for Examination, with the Examination pending.
- 6.2.7 In applying the 'Consented Scheme Future Baseline' approach, this EIA would assess the effects of the different/additional activities arising from the Proposed Development. The Consented Scheme planning documents for approval, such as the detailed drawings and planning conditions, will form the basis for the Future Baseline assumptions. By adopting this approach, the ES will be focussed on the effects of the different or additional activities associated with the Proposed Development, and does not provide reassessment of other aspects that would be unchanged, such as access, land take or external built form of the facility.
- 6.2.8 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 considered appropriate to robustly assess the Proposed Development are set out as follows:
- 2025 Future Baseline Scenario – A future date when the EfW in the Consented Scheme is built and with its theoretical operation based on the Consented Scheme; and
 - 2025 Operational Scenario with the Proposed Development – The assessment of the incremental change associated with the Proposed Development for comparison with the 2025 Future Baseline Scenario (i.e. the assessment of any operational changes relative to the Consented Scheme).
- 6.2.9 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 EfW in the Consented Scheme being built and in-situ.

Significant Effects and Scope of the EIA

- 6.2.10 As highlighted by the UK Government Online Planning Practice Guidance¹⁰ (PPG), where considering the scope of EIAs, the decision maker '*should limit the scope of the assessment to those aspects of the environment that are likely to be significantly affected*'.

- 6.2.11 This scoping exercise was informed by a desktop study, site visit, a review of the scheme proposals and professional judgement from the consultant team. The environmental information from the previous planning applications for the IWMF Site, the Environmental Permit, and IWMF Site monitoring data was reviewed to support any conclusions reached, where applicable.
- 6.2.12 Identified potential effects were evaluated based on the scale of the change/ impact and the value/ importance or susceptibility / sensitivity of the receptors/ resources, in accordance with standard assessment methodologies. The scope of the ES will be proportionate, focusing and reporting the significant effects of the 'extension' to operation of the EfW in the Consented Scheme. See Table 6.2 for further details on the proposed scope of the ES.

6.3 Determining the Significance of Effects

- 6.3.1 With respect to identifying the likely significant environmental effects associated with the Proposed Development, consideration will be given to potential effects associated with the completed and operational Proposed Development. These effects could be beneficial or adverse and deemed to be 'significant' based on:
- the value/importance of the resources and receptors that could be affected;
 - the susceptibility or sensitivity of resources/receptor;
 - the predicted magnitude of environmental change and/or impact experienced by these resources and receptors, accounting for their size, duration and spatial extent;
 - the nature of the environmental impacts (direct or indirect, reversible or irreversible, beneficial or adverse); and,
 - options for avoiding, reducing, offsetting or compensating for any potentially significant adverse effects and the likely effectiveness of such mitigation measures.
- 6.3.2 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 receptor; or
 - **Beneficial** – advantageous or positive effect to an environmental receptor.
- 6.3.3 Where adverse or beneficial effects are identified, these will be assessed against the following scale:
- **Negligible** – imperceptible effects to an environmental receptor; or
 - **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.

6.3.4 Each of the technical chapters will provide 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. A classification matrix will be provided in the ES and clear statements will be made within the topic chapters as to whether that effect is significant or not significant. Generally, major and moderate effects are considered to be significant, whilst minor and negligible effects are considered to be not significant. Professional judgement will be applied where appropriate.

6.3.5 It is expected that any necessary mitigation measures will be embedded into the scheme design. If additional mitigation measures are identified to reduce potential adverse effects to acceptable levels, these will be clearly defined. The residual effects that remain following implementation of these additional measures will be stated in the ES.

6.4 Assessment Methodology

Study Area

6.4.1 The study area for each topic will be based on the geographical scope of the potential for significant effects relevant to the topic or the information required to assess the likely effects, as well as topic-specific guidance and consultation with stakeholders. Further detail is provided in the technical sections of this Report (Sections 7-8).

Determining Baseline Conditions

6.4.2 Baseline environmental conditions need to be established to enable an accurate assessment of potential changes to such conditions that may occur and to assess the likely significant environmental effects of the Proposed Development.

6.4.3 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 EfW in the Consented Scheme is constructed and operational (i.e. what will happen in the absence of the Proposed Development being granted a DCO). These are known as the 'Future Baseline' conditions.

6.4.4 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:

- Desk-based studies;
- Site walkovers and surveys, as relevant; and

- Third-party data.

6.4.5 The future baseline will also take into account natural changes from the existing baseline scenario as far as they can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge and any other developments or works (e.g. quarrying activity) that may occur and affect the Site and surrounding area.

Construction Phase Assessment

6.4.6 The engineering operations for the Proposed Development, as described in Section 3, will be undertaken within the enclosed consented IWWMF building. The nearest sensitive receptor is The Lodge, located approximately 425m east from the Site boundary.

6.4.7 The 2016 Permission and Environmental Permit incorporates various environmental management controls that avoids, reduces or compensates for the environmental effects of the Consented Scheme (e.g. embedded in the design, through planning conditions or Section 106 obligations).

6.4.8 The Applicant has implemented a CEMP, agreed and secured through the Consented Scheme. Applicable updates to this document will be agreed and secured through the DCO process, if required. The updated CEMP will be implemented through the construction of the Proposed Development.

6.4.9 The scale of the engineering operations and the location of them within an enclosed space will limit the potential for significant construction effects to arise. The construction of the Proposed Development does not result in a material change in construction phase effects from the Consented Scheme. Therefore, a construction phase assessment is proposed to be scoped out of the EIA.

6.4.10 Nevertheless, relevant information and an indicative construction programme for the Proposed Development will be presented in the ES.

Operational Phase Assessment

6.4.11 The likely significant effects of the completed Proposed Development will be assessed for the anticipated year of completion, assumed to be 2024. The assessment will assume that the Proposed Development (and the EfW in the Consented Scheme as amended by the Proposed Development) is fully completed and operational. Even though full operation may not occur until later than the assumed date, this is unlikely to affect the likely significance of effects stated.

6.4.12 The completed Proposed Development assessment will be based on the detailed planning and technical drawings submitted alongside the planning application.

6.4.13 The ES will assess the potential environmental effects with embedded measures in place. If significant adverse effects are identified after considering these embedded measures, 'additional mitigation measures' will be proposed.

Decommissioning Phase Assessment

- 6.4.14 An assessment of any decommissioning effects is not specifically required under Schedule 4 of the EIA Regulations, although item (5)a) refers to the *'the construction and existence of the development, including, where relevant, demolition works'*.
- 6.4.15 The decommissioning of the Proposed Development will be undertaken in accordance with industry standard good practice. This will not result in a material change from the Consented Scheme. Therefore, a decommissioning phase assessment is proposed to be scoped out of the EIA. It should be noted that decommissioning would be subject to regulatory control through the Permit in the form of a Closure Plan.

Cumulative Effects Assessment

- 6.4.16 Cumulative effects can occur either when different effects from the Proposed Development interact to exacerbate effects on sensitive receptors, or when the magnitude of an effect is exacerbated by other future neighbouring developments, thus creating a more significant effect on a receptor. The cumulative assessment is important to ensure that the combined impacts of other schemes are understood and appropriately considered in decision making.
- 6.4.17 The EIA Regulations specify the information to be included in an ES (Schedule 4) and require that in assessing the effects of a particular development, consideration should be given to cumulative effects. Potential cumulative effects can be categorised into two types:
- Cumulative effects - are those that accrue over time and space from a number of different development activities and projects in geographical proximity to one another, which individually might be insignificant, but when considered together could create a significant cumulative effect (also referred to as 'inter-project' effects).
 - Effect interactions - occur when two or more different environmental effects from the Proposed Development (e.g. dust, noise and traffic) act together to produce a different level of effect/impact experienced by a receptor. These combined effects (or 'intra-project') can be additive or synergistic such that the sum of the impacts can be less or more than the individual impacts (i.e. because they may exacerbate or neutralise one another).

Inter-Project Cumulative Effects

- 6.4.18 The potential for inter-project cumulative effects to arise with other existing and/or approved development once the Proposed Development is completed and operational will be considered. The recommended four-step approach set out in Planning Inspectorate Advice Note 17¹¹ for cumulative assessment will be followed, as set out in Table 6.1.

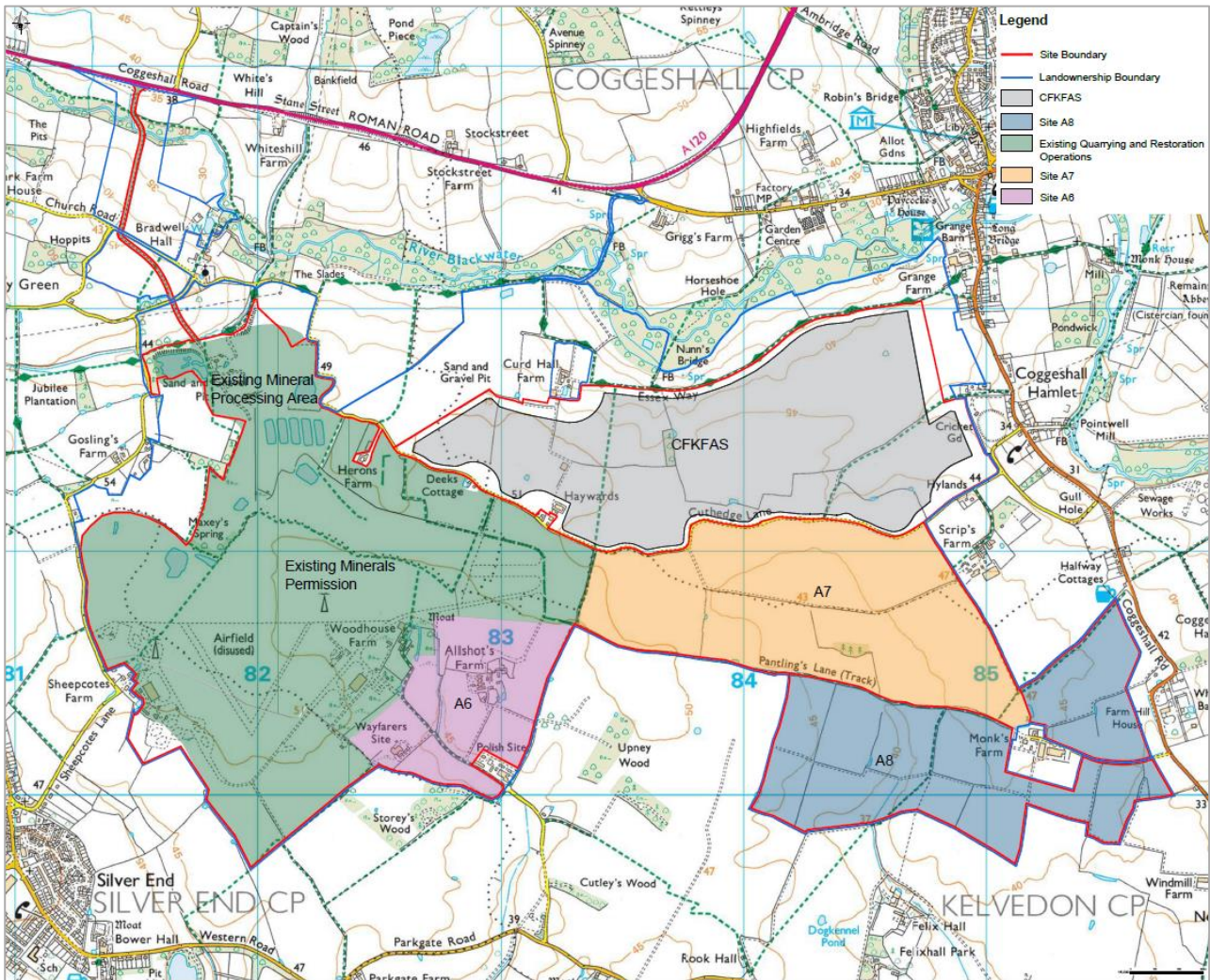
Table 6.1: Cumulative Assessment Process

Step	Description
Step 1: Identify Zones of Influence (Zol) and long list of cumulative schemes	<ul style="list-style-type: none"> ▪ Identify Zol of the scoped-in technical assessments of ES. ▪ Identify a long list of other ‘existing development and/or approved development’ within Zol of Proposed Development, for review in consultation with the local planning authorities, statutory consultees and other relevant organisations. ▪ Assign a level of certainty to identified cumulative schemes.
Step 2: Identify short list of cumulative schemes	<ul style="list-style-type: none"> ▪ Exclude all cumulative schemes of a nature, scale or temporal overlap without the potential to result in cumulative effects to ensure a proportionate assessment, in consideration of Zol of Proposed Development and consultation with the relevant stakeholders. ▪ Identify topic specific receptors and their geographical locations based on the study areas. Complete screening exercise based on a source-pathway-receptor approach to identify what, if any, sensitive receptors can be discounted from cumulative assessment.
Step 3: Information gathering	<ul style="list-style-type: none"> ▪ Gather detailed information on each of the cumulative development shortlisted at Stage 2. This may be collected from the public sources, LPAs, the Planning Inspectorate or directly from the Applicant. It will include but not be limited to <ul style="list-style-type: none"> - proposed design and location information; - proposed programme of demolition, construction, operation and/or decommissioning; and - environmental assessments that set out baseline data and effects arising from the cumulative scheme.
Step 4: Assessment	<ul style="list-style-type: none"> ▪ Assessment of the cumulative schemes with the Proposed Development. This will be carried out in accordance with the assessment methodology set out in Advice Note 17 and documented in a matrix format, in-line with Matrix 2 (Appendix 2).

6.4.19 As the Proposed Development is a proposed ‘extension’ to the Consented Scheme, the Consented Scheme will not be assessed within the cumulative effects assessment. Instead the Consented Scheme will be considered within the ‘Future Baseline Scenario’, as construction of the EfW in the Consented Scheme is required for the Proposed Development to be implemented. Additionally, the associated development associated with the Consented Scheme (such as the grid connection) was treated as cumulative development in the ES (as amended). As there are no changes proposed to these elements of the Consented Scheme, consideration of these aspects will be scoped out of the cumulative assessment for this ES.

6.4.20 Appendix 1 provides the long list and short list of cumulative schemes to be considered in the ES. This demonstrates that the only potential cumulative schemes for the Proposed Development relate to mineral extraction works in the vicinity of the Site. The spatial extent of these works is illustrated in Figure 6.1.

Figure 6.1: Extent and Site Referencing of Quarrying Activities



6.4.21 Quarrying and restoration works are complete within the Existing Minerals Permissions area. Excavation of minerals is expected to commence in 'Site A7' in Spring 2023, and likely to continue for up to 10 years (to 2033). Should planning permission be granted by ECC for the Coggeshall Feering and Kelvedon Flood Alleviation Scheme (CFKFAS) aimed at reducing flood risk in the River Blackwater catchment – consultation is due to complete in May 2024, with an application to be submitted thereafter – it could reasonably be expected that excavation works would halt (possible in 2028) for the expected 20-year duration of the CFKFAS, with work recommencing at Site A7 immediately afterwards. Excavations could then reasonably be expected to move into Site A8 for a six year period, followed by Site A6 for a four year period. As these excavation and restoration works will be ongoing while the facility is being constructed and operational, it is considered that there is potential for significant cumulative effects and it is proposed that an assessment of in-combination cumulative effects with these quarrying works is scoped into the

ES. The embedded mitigation and controls related to the quarrying activity to minimise adverse noise and air quality effects will be taken into account in the assessment.

- 6.4.22 The cumulative effects of the Proposed Development with other planned or committed development in the local area, will be considered on a topic-by-topic basis and reported in a separate ES Chapter, and mitigation measures proposed where necessary.

Effect Interactions

- 6.4.23 The proposed scope of the ES is limited to assessments of Noise and Greenhouse Gases and Climate Change. These topics do not interact on the same receptors (see further details in Sections 7 and 8). As such, there is no potential for effect interactions to occur and this aspect of cumulative assessment is proposed to be scoped out of the ES.

6.5 Structure of the ES

- 6.5.1 The ES will comprise three volumes, as follows:

1. Non-Technical Summary;
2. ES Chapters; and
3. ES Appendices.

- 6.5.2 Each environmental topic scoped into the ES will be structured as set out in Appendix A.

6.6 Proposed Topics to be Included in the ES

- 6.6.1 As highlighted by the UK Government Online Planning Practice Guidance¹² (PPG), where considering the scope of EIAs, the decision maker '*should limit the scope of the assessment to those aspects of the environment that are likely to be significantly affected*'.
- 6.6.2 This scoping exercise has been informed by a desktop study, a review of the scheme proposals and professional judgement from the consultant team. In addition, the environmental information associated with the previous planning applications on the Site has been reviewed to support any conclusions reached, where applicable.
- 6.6.3 The scope of the ES will be proportionate, focusing and reporting on the 'extension' to the operation of the Consented Scheme. Table 6.2 provides a summary of the scoping exercise.

Table 6.2: Summary of Approach to EIA Scoping Report

Chapter No.	Technical Topics	Future Baseline	Proposed Development Operation	Scope Topic In / Out
7	Climate Change and Greenhouse Gases	Determine conditions with Consented Scheme using latest methods	Assess impact of incremental 15 Mwe	Scope in
8	Noise ⁸	Determine conditions with Consented Scheme using latest methods	Model noise emissions to demonstrate impacts	Scope in
9 Topics Scoped Out				
	Air Quality	No change	No change	Scope Out
	Land Use and Contaminated Land	No change	No change	Scope Out
	Ground and Surface Water (and Flood Risk)	No change	No change	Scope Out
	Ecological Impact and Ecological Risk Assessment	No change	No change	Scope Out
	Landscape and Visual Impacts	No change	No change	Scope Out
	Archaeology and Cultural Heritage	No change	No change	Scope Out
	Travel and Transport	No change	No change	Scope Out
	Social and Community Issues	No change	No change	Scope Out
	Nuisance Impact Assessment (air emissions, dust, bioaerosols, odour, litter, insects, vermin)	No change	No change	Scope Out

⁸ Note that that the assessment of Vibration is proposed to be scoped out of the ES. Rationale is provided in Chapter 8 of this Scoping Report.

Chapter No.	Technical Topics	Future Baseline	Proposed Development Operation	Scope Topic In / Out
	and birds and light pollution)			
	Human Health	No change	No change	Scope Out
	Waste and Materials	N/A	No effects expected	Scope Out
	Vulnerability to Major Accidents and Disasters			Scope Out
	Aviation			Scope Out
	Energy and Utilities			Scope Out
	Electromagnetic Fields			Scope Out
	Telecommunications			Scope Out

Key:

Blue cells - Topic proposed to be scoped into EIA that was included in ES (as amended).

Grey cells - Topic proposed to be scoped out of EIA that was included in ES (as amended).

White cells – Additional topics considered for scope of EIA

6.6.4 Sections 7 and 8 set out those aspects of the environment that are likely to be significantly affected by the Proposed Development. Potential effects deemed to be non-significant within topics are also set out within these sections, as relevant.

6.6.5 Section 9 sets out those aspects of the environment that are unlikely to be significantly affected and which therefore will be scoped out of the ES. Justification is provided to support scoping out these topics, taking account of factors set out in Advice Note 7, including considerations of impact pathways, scale of impact, potential for avoidance or mitigation, and potential for cumulative effects with other environmental aspects.

6.6.6 In accordance with the EIA Regulations, all assessments will be prepared by consultants considered to have competent expertise in their discipline.

7 Climate Change and Greenhouse Gases

7.1 Introduction

7.1.1 The Climate Change and Greenhouse Gases ES chapter will provide details on the baseline conditions and the potential climate effects of the Proposed Development. This will include a detailed Greenhouse Gas (GHG) emissions assessment which will quantify the changes to greenhouse gas emissions or emission savings associated with the operation of the Proposed Development, including comparison of the emissions released from alternative energy generation.

7.2 Legislation, Planning Policy and Guidance

Legislation

7.2.1 The following legislation is relevant to the Proposed Development and climate change assessment:

- The Climate Change Act 2008¹³, which sets out the UK Government's commitment to reduce GHG emissions in the UK to 50% of 1990 levels by 2025, and to 80% by 2050;
- The Climate Change Act 2008 (2050 Target Amendment) Order 2019¹⁴ - which has introduced a new binding target of "Net Zero by 2050"; and
- Carbon Budget Orders 2009, 2011, 2016 and 2021¹⁵, which set out the first six carbon budgets, with the latest covering the period 2033-2037.

National Planning Policy

7.2.2 The following national planning policy is relevant to the Proposed Development and the climate change assessment:

- National Planning Policy Framework (NPPF)¹⁶;
- National Policy Statement (NPS) EN-1¹⁷;
- NPS for Renewable Energy Infrastructure (EN-3)¹⁸
- Revised draft NPS EN-1¹⁹; and
- Revised draft NPS EN-3²⁰.

Guidance

7.2.3 The following good practice guidance will be used to assess the impact of GHG emissions from the Proposed Development:

- IEMA - Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2022²¹ (IEMA Guidance'). This sets out areas for consideration at all stages of the assessment to assist EIA practitioners in taking an informed approach to the treatment of GHG emissions within an EIA. The IEMA Guidance mentions the legally binding GHG reduction targets and states that

an EIA must give due consideration to how a project will contribute to the achievement of these targets.

- Department for Business, Energy & Industrial Strategy, 2012. Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal²². October 2012.

7.3 Baseline Conditions and Study Area

Study Area

- 7.3.1 Greenhouse gas emissions have a global impact, rather than a national or local impact. Therefore, the GHG assessment will consider the impact of the Proposed Development on net global emissions, including the displacement of other power generation plants.
- 7.3.2 Any additional power generated would reduce the need for power to be generated elsewhere in the UK. At present, the marginal power source is considered to be gas-fired power stations. This approach is supported by the Department for Environment Food and Rural Affairs ('DEFRA') guidance 'Energy from Waste - a Guide to the Debate'²³ which states that *'a gas fired power station is a reasonable comparator as this is the most likely technology if you wanted to build a new power station today'*. This approach has been supported in several recent planning decisions, which will be referenced in the GHG assessment.
- 7.3.3 The GHG emissions assessment will consider all emissions of GHG emissions from the Proposed Development and indirect emissions from activities which are affected by the Proposed Development, including the displacement of other power generation plants.

Baseline Conditions

- 7.3.4 The Site is currently a formerly excavated quarry, within enabling and construction works underway associated with the Consented Scheme. Carbon emissions from these construction works are expected to be minimal.

Future Baseline Conditions

- 7.3.5 The Proposed Development will only affect the proposed EfW plant of the Consented Scheme and will allow it to generate additional electricity without changing the quantity of waste which is received. Therefore, the baseline scenario that the Proposed Development will be considered against will be the operation of the EfW plant in-line with the Consented Scheme, under which it can combust 595,000 tonnes of waste per annum and generate no more than 50 MWe.
- 7.3.6 In the future, it is likely that the marginal power source will change as the power generation system is decarbonised. Therefore, the GHG assessment will consider the benefits of the Proposed Development on a lifetime basis, taking account of the potential reduction in carbon intensity of the marginal power source, using data from Department for Business, Energy & Industrial Strategy ('BEIS') Guidance²⁴.

7.4 Potential Effects and Mitigation

7.4.1 There would be no material change to enabling works, construction and decommissioning phase emissions as a result of the Proposed Development, compared to the Consented Scheme.

7.4.2 It is anticipated that direct emissions of greenhouse gases will be unchanged as a result of the Proposed Development. The same amount of waste would be combusted, leading to the same quantity of carbon dioxide being released to the atmosphere. However, the Proposed Development will lead to the export of additional power compared to the Consented Scheme, which will displace other sources of power and so reduce indirect emissions. This will lead to a reduction in global carbon emissions, which may be a significant beneficial impact.

Cumulative Assessment

7.4.3 IEMA Guidance makes clear that climate change is *'the largest interrelated cumulative environmental effect'* and therefore the assessment of GHG emissions which contribute to climate is intrinsically cumulative.

7.4.4 On this point IEMA state that *'The atmospheric concentration of GHGs and resulting effect on climate change is affected by all sources and sinks globally, anthropogenic and otherwise. As GHG emission impacts and resulting effects are global rather than affecting one localised area, the approach to cumulative effects assessment for GHGs differs from that for many EIA topics where only projects within a geographically bounded study area of, for example, 10km would be included'*.

7.4.5 In terms of this assessment the following are relevant:

- The assessment will consider the effects of the Proposed Development in the context of national and local cumulative totals. Since the national totals assume that other developments will contribute GHGs, the assessment will consider their implications in determining significance.
- The geographical location of emissions has no relevance to the assessment. Therefore, the effects of the Proposed Development are independent of any local cumulative emissions.

7.4.6 Taking this into account, an assessment of the GHG emissions associated with cumulative developments was not undertaken and the cumulative GHG effects are considered to be the same as those for the Consented Scheme.

7.4.7 This is consistent with IEMA Guidance which states that *'Effects of GHG emissions from specific cumulative projects therefore in general should not be individually assessed, as there is no basis for selecting any particular (or more than one) cumulative project that has GHG emissions for assessment over any other'*.

Non-Significant Effects

7.4.8 The Proposed Development will have no effect on the resilience and vulnerability of the Consented Scheme to climate change effects and it is proposed to scope this

out of the ES. The following potential impacts were considered in defining this approach.

- Increases in winter precipitation may lead to increased flooding, but the Proposed Development does not include any changes to flood protection measures and does not introduce any new equipment which could be vulnerable to flooding.
- Decreases in summer precipitation may affect ecological mitigation measures associated with the Consented Scheme, but these are not being changed as a result of the Proposed Development.
- Increased frequency of wind and storms may damage the Consented Scheme that the Proposed Development would be housed in, but there are no changes to buildings or outside infrastructure as a result of the Proposed Development that would affect the consented design of the facility and associated mitigation, which is considered adequate to prevent significant effects from storms.
- Increases in summer temperatures may affect internal electrical infrastructure, but this is not being changed as a result of the Proposed Development.
- Sea level rise is not relevant given the location of the Site within Flood Zone 1.

7.5 Assessment Methodology

Establishing Baseline Conditions

7.5.1 The UK carbon budget figures will be taken from the Carbon Budget Orders.

7.5.2 Baseline carbon emissions from the local authority and the sector (Industrial and Commercial Other Fuels) values will be sourced from the most recent UK local and regional carbon dioxide emissions data tables.

Identifying Key Receptors

7.5.3 There are no specific receptors which will be affected as GHG emissions do not have a local impact.

Defining Assessment Approach

7.5.4 The net GHG emissions from the Proposed Development compared to the Consented Scheme will be calculated in line with the methodology presented in both the IEMA Guidance and UK Government guidance 'Energy recovery for residual waste - a carbon based modelling approach'²⁵.

7.5.5 Most of the quantities which are normally considered in GHG assessments for plants which generate power from waste would not change as a result of the Proposed Development, as the same waste would be combusted. The following would not change:

- the emissions from the waste to be combusted;
- the emissions associated with the transport of the waste to the Proposed Development;

- carbon savings from any additional metals recovery at the Proposed Development;
- offset of the emissions which would be generated by the waste being disposed in landfill;
- offset of the emissions which would be generated by the transportation of the waste to landfill; and
- offset of the emissions generated from the grid electricity for the power which would have been generated by waste in landfill.

7.5.6 Therefore, the calculation will only consider the offset of emissions generated from the grid electricity for the additional power generated by the Proposed Development compared to the Consented Scheme.

7.5.7 The significance of the effect will be considered against carbon emissions from the local authority and the sector (Industrial and Commercial Other Fuels) and the UK Carbon Budgets.

7.5.8 In relation to carbon emissions from the local authority and the sector (Industrial and Commercial Other Fuels) values will be sourced from the most recent UK local and regional carbon dioxide emissions data tables. In lieu of any values for waste as an individual sector, the '*Industrial and Commercial Other Fuels*' sector will be used, within which waste is included amongst other fuels. Where a >1% difference to the carbon emissions from the local authority and the '*Industrial and Commercial Other Fuels*' sector is identified, this will be considered to be a potentially significant effect (adverse or beneficial).

7.5.9 In relation to the UK Carbon Budgets, the Proposed Development will be considered against the periods 2023-2027, 2028-2032 and 2033-2037. There are currently no further published budgets for periods beyond 2037, but future carbon budgets will decrease towards net zero by 2050.

7.5.10 When considering the impact in relation to the carbon budgets, local carbon emissions, and sector carbon emissions, the IEMA Guidance suggests a threshold of 5% of the budget is used as an indicative threshold for which carbon impacts above this level are likely to be significant, but also states that '*any GHG emissions or reductions from a project might be considered to be significant*'.

7.6 Assumptions, Limitations and Uncertainties

7.6.1 The GHG emissions assessment will be based on a single year of operation of the Proposed Development, based on current design assumptions. In the future, it is expected that there may be changes to some of the assumptions used, such as the amount of heat exported. These will be considered in a sensitivity section of the assessment in the ES.

7.6.2 The marginal source of power which would be displaced by the Proposed Development in the future is uncertain. This will be considered in the sensitivity section in the ES.

8 Noise

8.1 Introduction

8.1.1 The assessment of operational noise is required to assess the potential impact of new machinery in the IWMF that would increase in the electrical efficiency of the facility. The Noise ES chapter will provide details on the baseline conditions and the potential noise from the operation of the Proposed Development on the nearest Noise Sensitive Receptors (NSRs) to the Site.

8.2 Legislation, Planning Policy and Guidance

Legislation Context

8.2.1 The following legislation is relevant to the Proposed Development:

- Environmental Protection Act 1990; and
- Control of Pollution Act 1974.

Planning Policy Context

National

8.2.2 The following national planning policy is relevant to the Proposed Development:

- NPPF (2021); and
- Noise Policy Statement for England (2010)²⁶.

Local

8.2.3 The following local planning policies are relevant to the Proposed Development:

- Essex and Southend-on-Sea Waste Local Plan 2017²⁷; and
- Braintree District Local Plan 2013-2033 (2022)²⁸.

Guidance

8.2.4 The following guidance is relevant to the Proposed Development:

- BS4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'²⁹;
- BS8233:2014 'Guidance on sound insulation and noise reduction for buildings'³⁰;
- World Health Organisation (WHO), 'Night Noise Guidelines for Europe' (2009)³¹;
- IEMA, The Guidelines for Environmental Noise Impact Assessment (2014)³² ('IEMA Guidelines').

8.3 Baseline Conditions and Study Area

Study Area

- 8.3.1 The Site is bordered to the north by Bradwell Quarry, with open fields and scattered residential receptors around the Site.
- 8.3.2 The study area encompasses the Site and extends to include the closest off-site NSRs which have been identified within this scoping report.

Baseline Conditions

- 8.3.3 A baseline monitoring survey was undertaken in October 2005 by Golder Associates (UK) Ltd at locations representative of the closest NSRs as part of the original 2008 planning application for the IWMF Site.
- 8.3.4 An updated noise survey was undertaken in August and October 2015 to inform the 2015 ES Addendum, which confirmed the acoustic environment had remained consistent.

Future Baseline Conditions

- 8.3.5 Based upon previous monitoring data, the soundscape includes road traffic noise from the A120 and aircraft operating from Stansted Airport. The future baseline would also include the Consented Scheme for the IWMF where noise would be controlled by the planning conditions outlined in Paragraph 8.5.2-8.5.4 which specify noise limits to be met.
- 8.3.6 The operation of the Bradwell Quarry to the north of the Site may have the potential to impact on daytime baseline sound levels. Therefore, once operations at the quarry cease daytime baseline sound levels at the nearest receptors may decrease. However, it is considered that the more sensitive evening, weekend and night-time baseline levels would not be influenced by changes in the operational status of the quarry.

8.4 Potential Effects and Mitigation

- 8.4.1 Likely significant effects during the operation of the Proposed Development are likely to include operational noise associated with the IWMF which would include various items of plant and noise breakout from the building itself.
- 8.4.2 It is understood that waste treatment operations will occur below ground level and will be effectively screened from surrounding receptors. Nonetheless, once details regarding proposed plant and operations are known, further consideration of this will be carried out within the PEIR and ES, and appropriate mitigation and design measures incorporated as necessary to reduce any potentially adverse effects.

Cumulative Assessment

- 8.4.3 The only cumulative schemes to be considered in the PEIR and ES are the consented operations associated with operational Bradwell Quarry. Operational

noise levels associated with the quarry’s current use contribute to the daytime noise climate at the nearest NSRs to the quarry. A number of these NSRs also have the potential to be impacted from operational noise from the Proposed Development. Consequently, a cumulative assessment of potential noise effects with the operation of Bradwell Quarry will be undertaken.

Non-Significant Effects

- 8.4.4 As there will be no change in the number or timing of vehicle trips relative to the Consented Scheme the operational Proposed Development is not expected to give rise to increased noise levels at the closest NSRs. The effects of road traffic noise are proposed to be scoped out of the ES Chapter.
- 8.4.5 The operational Proposed Development is unlikely to give rise to any vibration that would be measurable beyond the Site boundary. Vibration effects are unlikely to be significant and are proposed to be scoped out of the ES Chapter.

8.5 Assessment Methodology

Establishing Baseline Conditions

- 8.5.1 The 2016 Permission’s conditions outline noise limits at surrounding receptors and additional baseline noise monitoring does not need to be undertaken at this stage as these limits factor in baseline conditions.

Existing Planning Conditions

- 8.5.2 The operation of the Consented Scheme is subject to existing planning conditions relating to noise. Condition 38 states:

“Except for temporary operations, as defined in Condition 42, between the hours of 07:00 and 19:00 the free field Equivalent Continuous Noise Level ($L_{Aeq\ 1\ hour}$) at noise sensitive properties adjoining the Site, due to operations in the Site, shall not exceed the $L_{Aeq\ 1\ hour}$ levels set out [in Table 8.1].”

Table 8.1: Daytime Noise Limit Criteria – Condition 38

Noise Sensitive Properties Location	Criterion dB $L_{Aeq\ 1\ hour}$
Herring’s Farm	45
Deeks Cottage	45
Haywards	45
Allshot’s Farm	47
The Lodge	49
Sheepcotes Farm	45
Greenpastures Bungalow	45
Goslings Cottage	47
Goslings Farm	47

Noise Sensitive Properties Location	Criterion dB $L_{Aeq, 1\text{ hour}}$
Goslings Barn	47
Bumby Hall	45
Parkgate Farm Cottage	45

8.5.3 Condition 39 states *'The free-field continuous sound level ($L_{Aeq, 1\text{-hour}}$) shall not exceed 42 dB $L_{Aeq, 1\text{-hour}}$ between the hours of 19:00 and 23:00 as measured or predicted at noise sensitive properties listed in Condition 38'*.

8.5.4 Condition 40 states *'The free-field continuous sound level ($L_{Aeq, 1\text{-hour}}$) shall not exceed 40 dB $L_{Aeq, 5\text{-min}}$ between the hours of 23:00 and 07:00 as measured or predicted at noise sensitive properties listed in Condition 38'*.

8.5.5 It is considered that the daytime, evening and night-time limits contained in Conditions 38, 39 and 40 would be utilised for the purposes of this assessment.

Identifying Key Receptors

8.5.6 Within the 2015 ES Addendum Chapter, a total of 12 NSRs were assessed within the Chapter. A number of these receptors lie within close proximity to each other and as such for the purposes of this assessment, the closest NSRs to the Development will be assessed as outlined below.

8.5.7 The NSRs which are anticipated to be most affected by potential effects from noise are:

- The Lodge, Woodhouse Lane, approximately 425m east of the Site;
- Heron's Farm, Cut Hedge Lane, approximately 745m north of the Site;
- Gosling's Farm, Sheepcotes Lane, approximately 1km north west of the Site; and
- Sheepcotes Farm, Sheepcotes Lane, approximately 660m west of the Site.

8.5.8 Further to the above, the noise levels from the development would also be predicted and assessed at all the other NSR's identified in Table 8.1.

Defining Assessment Approach

Guidance and Standards to be Used

Predicted Noise Levels

8.5.9 In order to predict noise levels from the operational Proposed Development, SLR will utilise one of the following methods:

- **Method 1:** Utilise the predicted noise levels undertaken by Hitachi Zosen Inova (HZI) who are the Engineering, Procurement and Construction (EPC) contractor for the Proposed Development, and have been based on the exact specification of the plant and are included within a standalone report; or

- **Method 2:** Predict the noise levels generated by the Proposed Development at the nearest NSRs using the methodology in ISO 9613-2:1996, Acoustics – Attenuation of Sound during Propagation Outdoors³³ and the proprietary software-based noise model CadnaA.

8.5.10 With regards to Method 2, SLR would review the report undertaken by HZI, including all the calculations and inputs, to ensure that they are robust and are suitable for assessment purposes. Should the data provided by HZI not be appropriate for assessment purposes, Method 1 will be utilised.

Assessment Methodology

8.5.11 Predicted noise levels will be assessed against the noise limits specified in conditions 38, 39 and 40 to ensure these limits are met .

8.5.12 It must be noted that the noise assessment included within the 2008 ES and 2015 ES Addendum did not consider the use of BS4142 appropriate, due to the low background sound levels at the nearest NSRs. Instead, alternative assessment methods were utilised using the guidance contained in BS8233, the National Planning Practice Guidance (NPPG) and the World Health Organisation, Night Noise Guidelines for Europe document. Given the Consented Scheme has conditioned noise limits, these will be used for the purposes of this updated assessment.

Assessment of Key Effects

8.5.13 In order to determine the effect of noise upon NSRs, the Sensitivity Criteria, Impact Magnitude and Level of Effect will be used.

8.5.14 The sensitivity of the receiving environment is shown in Table 8.2.

Table 8.2: Sensitivity Criteria for Acoustic Receptors

Sensitivity	Receptor Type
High	Residential properties (night-time)
Medium	Residential properties (daytime)
Low	Offices and other non-noise producing employment areas
Negligible	Industrial areas

8.5.15 The impact of the operational noise of the Proposed Development upon existing receptors will be calculated and assessed against the noise limits presented in Conditions 38, 39 and 40. Based on these limits the impact of operational noise upon NSRs will be determined, with the levels outlined in Table 8.3.

Table 8.2: Operational Noise Upon Residential Receptors

Magnitude	Description
High	A specific noise level which is more than 5dB(A) above the noise limits set in Conditions 38, 39 and 40.

Magnitude	Description
Medium	A specific noise level which is between 3 and 5dB(A) above the noise limits set in Conditions 38, 39 and 40.
Low	A specific noise level which is between 1 and 3dB(A) above the noise limits set in Conditions 38, 39 and 40.
Negligible	A specific noise level equal to or below the noise limits set in Conditions 38, 39 and 40.

8.5.16 The sensitivity of the receiving environment together with the magnitude of impact defines the level of effect as shown in Table 8.4.

Table 8.4: Level Effect

Receptor Sensitivity	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

8.5.17 Where an effect is classified as Major, this is considered to represent a ‘*significant effect*’ in terms of the EIA Regulations. Where an effect is classified as Moderate, this may be considered to represent a ‘*significant effect*’ but should always be subject to professional judgement and interpretation, particularly where the sensitivity or impact magnitude levels are not clear or are borderline between categories or the impact is temporary or intermittent.

8.5.18 The Level of Effect Matrix provided within Table 8.3 provides a guide to decision making but is not a substitute for professional judgement.

8.6 Assumptions, Limitations and Uncertainties

8.6.1 The noise predictions would be based on operational noise data for all the proposed plant provided by the applicant or from a report completed by the EPC contractor. Therefore, it is considered that uncertainty regarding the predicted noise levels has been reduced as far as reasonably practicable.

8.6.2 However, should any of this change following the EIA assessment, the results of the assessment would need to be updated.

9 Non-Significant Effects

9.1 Introduction

9.1.1 As stated within the EIA Regulations, an ES is required to identify only the ‘*likely significant environmental effects*’ of a development.

9.1.2 The rationale for this scoping exercise has been guided by the current National Planning Practice Guidance on EIA (updated July 2017), which highlights the expectation that the ES should focus on the ‘*main*’ or ‘*significant*’ environmental effects only. The Guidance states:

“Whilst every Environmental Statement should provide a full factual description of the development, the emphasis should be on the “main” or “significant” environmental effects to which a development is likely to give rise. The Environmental Statement should be proportionate and not be any longer than is necessary to assess properly those effects. Where, for example, only one environmental factor is likely to be significantly affected, the assessment should focus on that issue only. Impacts which have little or no significance for the particular development in question will need only very brief treatment to indicate that their possible relevance has been considered.”

9.1.3 The following topics are considered to be those where ‘*significant*’ effects are unlikely to arise as a consequence of the Proposed Development. As such, these issues would not be assessed in detail through the EIA process.

9.1.4 As set out in Section 6, the Proposed Development solely comprises the installation of more modern and efficient combustion plant in the facility and so the potential for significant construction phase and decommissioning phase effects is not considered likely and it is not considered likely that the Proposed Development will give rise to materially different environmental effects to the Consented Scheme during these phases. Therefore, these phases are proposed to be scoped out of the EIA. No further commentary is provided on these phases of works in the sections below, with discussion focussed on the potential for significant effects during the operational phase of the Proposed Development.

9.2 Air Quality

Context

9.2.1 The impact of the Consented Scheme on local air quality was assessed in the 2015 ES Addendum. Subsequently, the limit on emissions to atmosphere from the EfW plant were reduced to obtain an Environmental Permit and the reduced impact was assessed as part of the Environmental Permit (EP) application in 2018. In addition, the Waste Incineration BAT Reference Note (the Waste Incineration BREF) was agreed in December 2019 and will come into force in December 2023. This includes reduced emission limits for energy from waste plants, so the Consented Scheme’s EP will be varied by the Environment Agency to have lower emission limits. This

means that the actual emissions from the Consented Scheme will be lower than those assessed in the 2015 ES Addendum.

- 9.2.2 The local area is not particularly sensitive to air emissions. The closest Air Quality Management Area (AQMA) is in Chelmsford, approximately 15km south east of the Site. There are no internationally designated ecological sites within 10 km and no nationally designated ecological sites within 2km of the Site. However, there are six locally designated ecological sites (County Wildlife Sites) within 2km of the Site.
- 9.2.3 There is only one existing residential receptor within 1km of the Site, Allshots Farm, approximately 450m east from the Site. The closest public footpath is approximately 150m to the east of the Site. The only change in number or location of residential properties within 1km of the Site since submission of the ES (as amended) is the commencement of redevelopment works on Woodhouse Farm, approximately 180m north east of the Site. This was an existing residential receptor at the time of the 2008 assessment but is now vacant and to be redeveloped for commercial and education uses under the 2016 Permission for the Consented Scheme.
- 9.2.4 Background concentrations of pollutants are low in the area around the Site. The annual average background concentrations from the 2015 ES Addendum and the 2018 EP application are compared to the most recently available data in Table 9.1.

Table 9.1: Air Quality Baseline Data Comparison

Pollutant	Unit	2015 ES	2018 EP	2023	Air Quality Assessment Level (AQAL)
Nitrogen dioxide	µg/m ³	14.89	18.6	14.8	40
Oxides of nitrogen	µg/m ³	22.01	26.9	20.0	30
Sulphur dioxide	µg/m ³	3.65	6.2	6.2	125
Particulate matter (as PM ₁₀)	µg/m ³	19.58	20.2	18.0	50
Particulate matter (as PM _{2.5})	µg/m ³	12.47	13.8	10.9	40
Carbon monoxide	µg/m ³	267	301	301	10,000
Hydrogen chloride	µg/m ³	0.72	0.72	0.72	750
Hydrogen fluoride	µg/m ³	2.35	2.35	2.35	16

- 9.2.5 This data for most pollutants is the maximum mapped background concentration within the modelling domain, taken from datasets prepared by DEFRA. The 2015 ES Addendum used the DEFRA 2011 dataset, the 2018 EP application used the DEFRA 2013 dataset, and the most recent dataset available is from 2018. For sulphur dioxide and carbon monoxide, all assessments used the 2001 dataset as this is the only one available, but the domain for the 2015 ES was smaller and so some of the figures are different. For hydrogen chloride and hydrogen fluoride, all assessments used monitored data and there has been no change to this since 2015.

9.2.6 The background concentrations are all well below the relevant AQAL, and that the concentrations have generally fallen since 2015.

9.2.7 The main pollutants from the operational Consented Scheme, as amended by the Proposed Development, would be oxides of nitrogen (NO_x), sulphur dioxide, carbon monoxide, particulates, hydrogen chloride, hydrogen fluoride, volatile organic compounds (VOCs), ammonia, heavy metals and dioxins and furans. The gas engines associated with the anaerobic digestion plant would also release NO_x, VOCs and carbon monoxide. The impact of all these substances was considered in the air quality assessment for the 2015 ES Addendum. This showed that:

- For most pollutants, the peak long term process contribution was less than 1% of the relevant air quality standard and the short term process contribution was less than 10% of the relevant air quality standard. This meant that the impact for most pollutants could be screened out as insignificant.
- For NO_x, sulphur dioxide, VOCs and cadmium, when the process contribution was combined with the background concentrations, the total Predicted Environmental Concentration (PEC) was less than 70% of the relevant long term air quality standard. Hence, the impact was negligible.

9.2.8 The impact was also assessed in the 2018 EP application. For this application, the emission limits for NO_x, sulphur dioxide and cadmium/thallium were reduced from those used in the 2015 assessment. The 2018 assessment came to similar conclusions to the 2015 assessment and showed that:

- For most pollutants (sulphur dioxide, hydrogen chloride, hydrogen fluoride, particulate matter, carbon monoxide, ammonia, PAHs, PCBs and all metals except cadmium), the peak long term process contribution was less than 1% of the relevant air quality standard and the short term process contribution was less than 10% of the relevant air quality standard. This meant that the impact for most pollutants could be screened out as insignificant. In contrast to the 2015 assessment, this conclusion applied to emissions of sulphur dioxide.
- For NO_x, VOCs and cadmium, when the process contribution was combined with the background concentrations, the total Predicted Environmental Concentration (PEC) was less than 70% of the relevant long term air quality standard. Hence, the impact was negligible.

9.2.9 As noted earlier, the Waste Incineration BREF was agreed in December 2019 and comes into force in the UK in December 2023. This means that the emission limits for some substances will be reduced before the Consented Scheme begins to operate.

9.2.10 The abatement techniques, for cleaning the gas which are consistent with the BREF and were determined to be Best Available Techniques in the Environmental Permit, are as follows:

- advanced selective non-catalytic reduction (including ammonia injections into the gas stream to remove oxides of nitrogen);
- lime injections to neutralise acid gases;

- activated carbon injections to remove mercury, dioxins and furans; and
- bag filtration system to remove particulates and heavy metals, as well as the lime and activated carbon.

9.2.11 Table 9.2 shows the daily emission limits from the 2015 ES Addendum, the 2018 EP application and the BREF.

Table 9.2: Daily Emissions Limits

Pollutant	Unit	2015 ES Addendum Assessment	2018 EP Application	BREF
Oxides of nitrogen (as NO ₂)	mg/Nm ³	200	100	100
Sulphur dioxide	mg/Nm ³	50	50	30
Carbon monoxide	mg/Nm ³	50	50	50
Particulates	mg/Nm ³	10	10	5
Hydrogen chloride	mg/Nm ³	10	10	6
Volatile organic compounds (as TOC)	mg/Nm ³	10	10	10
Hydrogen fluoride	mg/Nm ³	1	1	1
Ammonia	mg/m ³	10	10	10
Cadmium and thallium	mg/Nm ³	0.05	0.02	0.02
Mercury	mg/Nm ³	0.05	0.05	0.05
Other metals	mg/Nm ³	0.5	0.5	0.3
Dioxins and furans	ng ITEQ/Nm ³	0.1	0.1	0.06

9.2.12 In addition, the Environmental Permit for the Consented Scheme has half-hourly emission limits. The half-hourly emission limit for NO_x was reduced from 400 mg/Nm³ in the 2015 ES Addendum to 200 mg/Nm³ in the 2018 EP application, and the half-hourly emission limit for sulphur dioxide was reduced from 200 mg/Nm³ in the 2015 ES Addendum to 90 mg/Nm³ in the 2018 EP application. These limits are not changed by the BREF.

Rationale for Scoping Out

9.2.13 The Consented Scheme includes an extensive flue gas treatment plant to reduce emissions to atmosphere to the levels required in the Environmental Permit. None of this treatment plant is changed as a result of the Proposed Development.

9.2.14 The Proposed Development proposes to introduce a more modern and efficient plant into the facility to that proposed under the Consented Scheme. This involves

no changes to the combustion of waste or the treatment of the flue gases. Exactly the same waste will be combusted and the releases to atmosphere and abatement techniques will be unchanged. The effect of the Proposed Development will be to allow more efficient utilisation of the heat generated from the combustion of waste, so that more power can be generated from the same amount of waste.

- 9.2.15 This means that there will be no change to the impacts on air quality as a result of the Proposed Development. However, as outlined above, the impact of the plant once it is operating will be less than the impact modelled in the 2015 ES Addendum due to the emission limits being reduced. Therefore, the impact of the EfW plant on local air quality will be smaller than anticipated in the 2015 ES Addendum and will be unchanged by the Proposed Development.
- 9.2.16 In summary, the Proposed Development will not lead to any changes in air quality in the local area, and both the Consented Scheme and the Proposed Development will have an insignificant impact on local air quality. While providing a higher electrical output, this equipment would utilise the same volume of input material and is not expected to lead in any worsening in potential air quality effects. There would be no change in stack height, with compliance with the principles of Condition 56 of the 2016 Permission, stating that the maximum height of the stack shall not exceed 85m AOD. As such, it is recommended that an assessment of air quality effects is scoped out of the EIA.

9.3 Land Use and Contaminated Land

Context

- 9.3.1 The Proposed Development will not involve any breaking of ground or underground works. The works associated with the Proposed Development will involve mechanical modification and engineering works to the Consented Scheme to increase the thermal efficiency of the generating station. The consented land use, building envelope and architecture will remain unchanged.
- 9.3.2 Historical investigations at the Site associated with the 2016 Permission did not identify evidence of contamination, with the 2015 ES Addendum stating that no contaminated land was encountered during quarrying operations. Quarrying operations in the vicinity of the Site remain ongoing.
- 9.3.3 The environmental design and management measures set out in the ES (as amended) and Environmental Permit are expected to remain valid for the works associated with the Proposed Development. Additionally, Condition 25 of the 2016 Permission has been discharged to ensure that land contamination and land remediation and mitigation measures have been carried out in accordance with the approved details on the Site.

Rationale for Scoping Out

- 9.3.4 Excavation works associated with the Consented Scheme are underway, with retaining structures being implemented in advance of construction of the IWMF building. As all excavation and construction works will be complete to enable the

Proposed Development, the Site would not be subject to ground disturbance as part of the works required for the Proposed Development.

- 9.3.5 Given that the Proposed Development will be contained within the IWMF building and will have no below ground interventions, it is recommended that land use and contamination is scoped out of the EIA.

9.4 Ground and Surface Water (and Flood Risk)

Context

Flood Risk

- 9.4.1 There are no major watercourses on or in the vicinity of the Site, with the closest being the River Blackwater, approximately 2km north of the Site boundary. The closest surface water bodies to the Site are the ponds associated with the former quarrying works, approximately 650m north of the Site. The 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 (AEP)).
- 9.4.2 Online surface water flood maps³⁴ show the northern extent of the Site is at low risk from surface water flooding. The Site is also considered to be at a low risk of flooding from reservoirs.

Groundwater

- 9.4.3 The Site is underlain by the Upper Chalk formation, designated as a principal aquifer. This is overlain by London Clay and superficial sand and gravel deposits. Quarrying operations have confirmed that perched groundwater is located in these superficial deposits at natural low points in the local area resulting from natural variations between the London Clay and overlying strata. The Site is not located in a groundwater Source Protection Zone.
- 9.4.4 Groundwater monitoring was carried out to inform the assessment provided in the 2015 ES Addendum. This concluded that there is no existing evidence of historical ground contamination on the Site. However, there is potential for unidentified contamination to result in slight adverse impacts on the condition of perched groundwater. Condition 24 of the 2016 Permission was discharged which has provided results of a groundwater monitoring exercise in advance of excavation works to update and verify this groundwater monitoring. This provided monthly groundwater level data to ECC's Minerals Planning Authority (MPA) for the period between January 2008 and August 2015, associated with wider quarrying operations. These results show that the sand and gravel deposits beneath the Site contain minor amounts of water, with groundwater flows towards the north east and the River Blackwater.
- 9.4.5 Implementation of a CEMP during excavation and construction works of the Consented Scheme will seek to ensure that no potential effects on groundwater and surface water bodies occur during the construction phase. Ongoing groundwater

monitoring will also be carried out within existing wells within Bradwell Quarry (nos. Pz01, Pz02, Pz07, Pz09a, Pz11, Pz16a, Px18, Pz19 and Pz21) and boreholes (nos. BH 10, BH 11 and BH 19) on a monthly basis during the construction phase of the Consented Scheme.

Water Management

- 9.4.6 As set out above, internal water management will be a circular system with little wastage. Condition 23 was discharged that provides the WPA with a detailed scheme of surface water drainage and groundwater management.

Rationale for Scoping Out

- 9.4.7 The Consented Scheme is considered to have no significant effects of flood risk, surface water drainage or surface water quality.
- 9.4.8 The operational phase of the completed Proposed Development will not have any direct impacts on watercourses or surface water bodies. It will not change the water demand or discharge relative to the Consented Scheme. The same cooling tower and associated pumps will be utilised and the number of operational staff is not considered to materially change to the Consented Scheme. The amount of blowdown/evaporation of steam will be unchanged or less in comparison to the Consented Scheme because the Consented Scheme as amended by the Proposed Development will use more of the steam to generate electricity. Therefore, the potable water demand and effects on water quality will be the same or less than is associated with the Consented Scheme.
- 9.4.9 On this basis it is expected that potential water environment effects will be unchanged or less than the Consented Scheme, and an assessment of water quality and usage is proposed to be scoped out of the ES.
- 9.4.10 Given the existing flood constraints, it is proposed to scope an assessment of flood risk out of the ES. It is not proposed that a Drainage Strategy is required as part of the DCO application, however a Flood Risk Assessment (FRA) is required in accordance with the NPPF, NPS EN-1 and Draft NPS EN-1³⁵ due to the size (over 1ha) and location of the Development (in Flood Zone 1). The FRA will be submitted as a standalone document for the planning submission and will consider risks to the 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). This will also ensure that considerations of the Proposed Development's vulnerability to climate change are considered.

9.5 Ecological Impact and Ecological Risk Assessment

Context

- 9.5.1 The Site is currently cleared, with excavation and implementation works of the Consented Scheme underway in accordance with the applicable planning controls set out above. As such, the ecological value of the Site is considered to be low.

- 9.5.2 Baseline ecological surveys have been carried out on the IWMF Site between 2005 to 2010. Updates to relevant surveys (habitat, badger, breeding birds) were carried out in 2014 through Condition 53 of the 2016 Permission. No evidence of badger and breeding bird was identified during these surveys. District badger and reptile surveys were also carried out in Autumn 2020 at the Woodhouse farm area and no evidence of badger or reptile was found.
- 9.5.3 All construction works associated with the Consented Scheme are being undertaken in accordance with a detailed great crested newt method statement, which includes provision newts to be relocated to the newt mitigation area to the east of the Site in Woodhouse Farm. A translocation licence for great crested newt was issued by Natural England in 2011 and was replaced by a District Level Licence in 2022.
- 9.5.4 Airfield buildings where there was potential for bats were checked for presence before demolition and are no longer present. A European Protected Species Licence for bats will be applied for during the refurbishment works of buildings at Woodhouse Farm.
- 9.5.5 The Consented Scheme set out a framework for habitat and arboricultural management. Details of habitat and arboricultural mitigation and management have been developed through discharge of Conditions 54 and 59, while details of the green roof of the Consented Scheme have also been submitted to ECC through discharge of Condition 18.
- 9.5.6 Additionally, Condition 55 provides controls to ensure that no demolition, excavation or hedgerow/tree removal works occur during the bird nesting season and Condition 58 would ensure the replacement of retained vegetation that dies within five years of completion of the Proposed Development.

Rationale for Scoping Out

- 9.5.7 The Proposed Development will be contained within the IWMF building and will not result in any changes to the external works undertaken as part of the Consented Scheme. There will also be no change in vehicle trips associated with the operation of the Proposed Development relative to the Consented Scheme; therefore there will be no changes in air quality effects on ecological receptors. For these reasons, it is considered that an assessment of the potential for impact on ecology and biodiversity would not be required for the Proposed Development and that this assessment is recommended to be scoped out of the EIA.

9.6 Landscape and Visual Impacts

Context

- 9.6.1 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. Visual effects relate to changes to existing views of identified visual receptors from a proposed development.

- 9.6.2 A management plan for the EfW plant was submitted and approved by the WPA through discharge of Condition 17 to ensure there is no visible plume from the stack and minimise any potential landscape and visual impacts.
- 9.6.3 Retention of an area of approximately 1.44 ha of broad-leaved semi-natural woodland in the south eastern area of the IWMF Site and creation of new bands of broad-leaved semi-natural woodland around the perimeter of the IWMF building are defined by the Habitat Management Plan, discharged through Condition 14. This will ensure that visual screening of the IWMF building is provided to nearby sensitive receptors. Linked to this, a management and watering scheme for the trees adjacent to the retaining wall surrounding the IWMF is in place during excavation and construction works, and throughout the first growing season after completion of the construction phase where necessary, through discharge of Condition 60. This will maintain the visual screen provided by the vegetation.

Rationale for Scoping Out

- 9.6.4 The Proposed Development will be contained within the IWMF building and would not lead to any changes in the building envelope, facade or external landscaping strategy of the Consented Scheme. Given the absence of any visibility of the Proposed Development, it is considered that an assessment of landscape and visual effects can be scoped out of the ES.

9.7 Archaeology and Cultural Heritage

Context

- 9.7.1 Works associated with the Consented Scheme include excavation works within the former quarry to create a level plateau for construction of the IWMF.
- 9.7.2 A level 3 historical survey of former airfield buildings and structures was submitted to ECC in February 2016 in advance of demolition works through discharge of Condition 60. The demolition works have now been completed.
- 9.7.3 Condition 64 was partly discharged in February 2016, providing details of historical building recording to carry out restoration works to the Grade II listed cluster of buildings at Woodhouse Farm. Further information was provided in July 2021 to fully discharge the condition to enable restoration works to commence.

Rationale for Scoping Out

- 9.7.4 The Proposed Development will not involve any breaking of ground or underground works, and therefore has no potential to affect buried archaeology. The Proposed Development will also not change the height, building envelope or external appearance of the Consented Scheme. As such, there would be no change to unidentified buried archaeological assets or the setting of the restored Grade II listed Woodhouse Farm or other listed buildings in the vicinity of the Site, including the Grade I listed Parish Church of the Holy Trinity and other nearby Grade II listed buildings from the operational Proposed Development.

- 9.7.5 Given that the Proposed Development will be contained within the IWWMF building and have no below ground interventions, it is recommended that archaeology and cultural heritage is scoped out of the EIA.

9.8 Travel and Transport

Context

- 9.8.1 As set out previously, Conditions 3 and 4 of the 2016 Permission control the permitted number of vehicle movements for the Consented Scheme during the construction and operational phases. Conditions 5-9, 20, 21, 34 - 37, 62, 63, and 65 have also been discharged associated with traffic movements on the access road and local road network.

Rationale for Scoping Out

- 9.8.2 The completed Proposed Development would not lead to a change in the permitted number of vehicle movements associated with the 2016 Permission. No new or materially different effects on travel and transport are predicted from the operational Proposed Development and it is proposed to be scoped out of the ES.

9.9 Nuisance Impact Assessment (bioaerosols, odour, litter, insects, vermin and birds)

Context

- 9.9.1 Section 29(1) of the Environmental Protection Act 1990³⁶ defines matters which constitute a statutory nuisance. This includes dust, noise and light pollution covered elsewhere in this report, but also considerations of odour, bioaerosols, insects, vermin and birds.
- 9.9.2 Microorganisms contained within the organic component of waste can be released into the air when the material is agitated or moved. Once released to the air, these micro-organisms can remain airborne for long periods of time forming what is known as 'bioaerosol', an aerosol of biological particles. They can have nuisance impacts as well as indirect impacts on human health. Odour can be a general nuisance caused by the inhalation of emissions, with the primary source likely to be from the fraction of waste within the IWWMF.
- 9.9.3 Any bioaerosols and odours that may be created in the IWWMF will occur in controlled air ventilation environments. A Fugitive Emissions Risk Assessment and Management Plan was submitted within the Environmental Risk Assessment for the Environmental Permit application. No potential exposure was considered higher than a 'Low' risk and these were all internal to the IWWMF building and immediate surrounds, with the greatest potential nuisance deemed to be dust on workers' clothing or vehicles. However, with the installation of good operational equipment in accordance with HSE Guidance³⁷, potential nuisance effects from dust will be mitigated. A Dust Minimisation Scheme Statement was also issued to the WPA associated with the discharge of Condition 51(a) to minimise dust nuisance arising from the operation of the Consented Scheme.

- 9.9.4 The Consented Scheme has measures in place to control and minimise potential impacts from bioaerosols, including construction of the IWMF below ground level where local wind speeds will be reduced, the carrying out of operations within an environmentally controlled building with in-built air and dust extraction equipment, and wastes being imported and exported in covered HGVs. Condition 52(a) has been discharged which provided an Odour Minimisation Scheme Statement with details of fugitive odour management to the WPA. These measures are unchanged by the Consented Scheme, as amended by the Proposed Development.
- 9.9.5 The risk of litter nuisances will be minimal as all systems of waste transportation, handling and treatment will be enclosed within the IWMF building, with fencing erected around the IWMF Site. As the Proposed Development does not change the volume of waste, employee numbers or day to day operation of the IWMF, it is not expected to lead to any increases in littering. A cleaning routine will also be in place to ensure any windblown litter is collected and floors in the waste handling areas are washed down. These mitigation measures, as with those set out above, will act as controls to minimise the risk associated with insects, vermin and birds. Additionally, where necessary, specialist contractors would be employed to exterminate any occurrences.
- 9.9.6 Given the above, no significant nuisance impacts are expected for the Consented Scheme.

Rationale for Scoping Out

- 9.9.7 The Proposed Development would not have any impact on the process of waste entry, handling and egress from the IWMF. As such, there would be no changes to the nuisances described above and this topic is proposed to be scoped out of the EIA.

9.10 Light Pollution

Context

- 9.10.1 The Site is located in a light sensitive area, defined as Environmental Zone E2 and a brightness value of between 0.25-0.5 nanowatt/cm²/cr.
- 9.10.2 Construction lighting details of the Consented Scheme are controlled through the discharge of Condition 43, with limits on luminance levels and timing periods. This ensures that construction lighting is designed to minimise the potential nuisance of light spillage from the boundaries of the IWMF Site.
- 9.10.3 An external lighting strategy for the Woodhouse Farm car park was discharged through Condition 13. Details of the external operational lighting strategy for the Consented Scheme have yet to be agreed with the WPA through the discharge of Condition 44. Condition 44 requires external lighting not to exceed 5 lux maintained average luminance and that the lighting shall only be illuminated between 07:00-18:30 Mondays to Fridays, 07:00-13:00 on Saturdays and at no times on Sundays and bank holidays, with exception of security and safety lighting activated by sensors. The heights of permanent lighting columns around the buildings will be

below the surrounding ground level and facing downwards and no lighting will be provided on the access road.

Rationale for Scoping Out

- 9.10.4 Given that the Proposed Development will be contained within the IWWMF building and no changes are proposed to the Consented Scheme external lighting strategy, no changes to light pollution effects are expected. Therefore, an assessment of light pollution is proposed to be scoped out of the EIA.

9.11 Social and Community Issues

- 9.11.1 The Consented Scheme would create long-term employment opportunities once it is operational.
- 9.11.2 The Proposed Development is not expected to lead to any changes to direct or indirect employment numbers relative to the Consented Scheme. No significant socio-economic effects are expected. It is considered that socio-economics can be scoped out of the EIA.

9.12 Human Health

- 9.12.1 It is anticipated that there will be limited interactions with the Proposed Development and human health during operation. Whilst there may be some minimal impacts generated by the Proposed Development (such as noise), these are not anticipated to result in any significant health and well-being effects. It is considered that health can be scoped out of the EIA.

9.13 Waste and Materials

- 9.13.1 The Development will not lead to any change in the types and quantities of operational waste brought to the IWWMF for energy generation which are controlled by Condition 29. Residues generated by the Consented Scheme (which will comprise primarily bottom ash and air pollution control residues) are expected to be unchanged. It is considered that the assessment of waste generation can be scoped out of the EIA.

9.14 Vulnerability to Major Accidents and Disasters

- 9.14.1 Major accidents and disasters are by nature very infrequent and low probability events. Although no definition is provided in the EIA Regulations or PPG, Institute of Environmental Management and Assessment (IEMA) Guidance³⁸ provides the following definition for a major accident as *'an event which threatens immediate or delayed serious environmental effects to human health, welfare and/or the environment, and requires the use of resources beyond those of the client or its appointed representatives (i.e. contractors) to manage'*. A disaster is defined as *'a man-made/external hazard such as an act of terrorism, or a natural hazard such as an earthquake or extreme weather event, with the potential to cause an event or situation that meets the definition of a major accident'*.

- 9.14.2 The additional increase in electrical output sought through the Proposed Development relative to the Consented Scheme is not anticipated to change the vulnerability of the facility to major accidents and disasters.
- 9.14.3 No other significant effects relating to the vulnerability of the Proposed Development to major accidents and disasters have been identified for further assessment within the EIA and it is proposed that this topic is scoped out of the ES.

9.15 Aviation

- 9.15.1 London Stanstead Airport is the closest airport, approximately 25km west of the Site.
- 9.15.2 The Consented Scheme, currently under construction, will remain as permitted, with no change to proposed maximum permitted building height of 85m AOD, including stack. The engineering works which would comprise the Proposed Development are all internal and there will not be any material change to the size or scale of the Consented Scheme, including the stack. It is also not expected that the Proposed Development would necessitate any expected change to temporary construction crange relative to the Consented Scheme. Therefore, it is considered no assessment of potential aviation impacts will be required as part of this EIA and it is scoped out of the ES.

9.16 Energy and Utilities

- 9.16.1 The Consented Scheme made provision for the necessary utilities connections to the IWMF, with the proposed infrastructure connection to the grid network. While the Proposed Development proposes an uplift in electrical output generation relative to the Consented Scheme, there is no requirement to amend the consented utilities infrastructure to cater for this increased output. As such, an assessment of energy and utilities is proposed to be scoped out the ES.

9.17 Electromagnetic Fields

- 9.17.1 There are no buried or overhead power lines on the Site. No major sources of electro-magnetic fields (such as high voltage transformers or electricity transmission line/cable) are proposed as part of the Proposed Development. All new electrical plant will be designed in accordance with the current British Standards (e.g. BS EN 62041:2020) which set the specific limits for electro-magnetic fields.
- 9.17.2 No significant effects in relation to electromagnetic fields have been identified and therefore this topic is proposed to be scoped out of the ES.

9.18 Telecommunications

- 9.18.1 The ES (as amended) assessed the potential effects on digital terrestrial and satellite television reception associated with the Consented Scheme.
- 9.18.2 The height and scale of the Proposed Development is unaltered relative to the Consented Scheme. As no navigational aids or major telecommunication relay

stations have been identified in the immediate vicinity of the Site, it is considered unlikely that there will be any significant telecommunications effects as a result of the Proposed Development. Accordingly, it is proposed that this issue can be scoped out of the ES.

Appendix A – Structure of ES Technical Chapters

Introduction

The introduction will provide a brief summary of what is considered in the chapter and will state the author and/or relevant technical contributor and their competence.

Legislation, Planning Policy and Guidance

This section will summarise the relevant planning policy, legislation and guidance that form the context for the topic in bullet point form to minimise length. A detailed review of relevant planning policy, legislation and guidance will be provided as an Appendix to the chapter or within the supporting technical report within Volume II of the ES.

Assessment Methodology

The assessment methodology section in each chapter will provide an explanation of methods used in undertaking the technical assessment and the prediction of effects. Reference will be made to published standards, professional guidelines and best practice of relevance to the topic.

This section will also describe any topic-specific significance criteria applied in the assessment, particularly where these differ from common or generic criteria applied elsewhere in the ES. However, wherever possible, a common scale and language for assessing effects will be applied.

Consultation undertaken as part of the assessment to agree scope or methodology will be set out in the chapter. Where appropriate, it will describe the assumptions and limitations related to the assessment of the topic and any constraints to undertaking the assessment.

Baseline Conditions

A description of the environmental conditions that exist in the absence of the Proposed Development both now and, where relevant, those that are projected to exist in the future will be provided. The results of baseline surveys and desktop research will be summarised in this section.

Relevant receptors to the specific topic-based effects (e.g. noise, air quality) will be described, together with an indication of the relative sensitivity of these receptors to such effects. Comment will also be made on the future baseline conditions as required by the EIA Regulations.

Scheme Design and Management

This section will present the embedded design and / or management measures that will form part of the Proposed Development to avoid, prevent, reduce or offset environmental effects. These measures will be clearly defined to ensure transparency and to ensure that the impact assessment does not assess a scenario that is unrealistic in practice.

Completed Development

This section will present the assessment of potential effects that are predicted to occur once the Proposed Development is complete and occupied together with the mitigation and residual effects.

Cumulative Effects

This section will present the assessment of potential cumulative effects with other projects in the vicinity that are predicted to occur for the operational Proposed Development together with the mitigation and residual effects.

Summary

This section will include a tabulated summary of the potential effects, mitigation measures and residual effects. The potential mechanisms by which the proposed mitigation measures will be implemented (e.g. CEMP, specific planning conditions or Section 106 obligations) will be specified, where appropriate.

Appendix B – Relevant 2016 Permission Planning Conditions

6	Access road and crossing points
10	Archaeology written scheme of investigation
11	Recording of airfield buildings/structures
13	Signage, telecoms and lighting at Woodhouse Farm complex
14	Stack design and finishes
15	Design details and construction materials
17	CHP management plan
18	Green rooves
19	Details of IWMF process layout and configuration
20	Construction compound
21	Car and HGV parking
22	Foul water management
23	Surface water drainage and groundwater management
24	Groundwater monitoring
25	Land contamination and remediation
37	Signage at footpath crossings on access road
43	Construction lighting
44	Operational lighting strategy
45	Phasing strategy for access road
46	Soil handling and storage
50	Fencing
51(a)	Dust suppression measures
51(b)	Dust suppression
52(a)	Odour minimisation
52(b)	Odour-limiting equipment
53	Ecological surveys
54	Habitat Management Plan
57	Landscaping, bunding and planting
59	Retention and protection of vegetation
60	Tree management
61	Woodhouse Farm parking and landscaping
62	Traffic calming measures at River Blackwater
63	Access road crossing points
64	Woodhouse Farm building recording
69	Updated noise assessment

Appendix C – Cumulative Scheme Schedule

Planning Inspectorate definitions for consideration of cumulative schemes

Tier 1	Under construction; Permitted application(s), whether under the PA2008 or other regimes, but not yet implemented; Submitted application(s) whether under the PA2008 or other regimes but not yet determined.
Tier 2	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted.
Tier 3	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted. Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals; Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

Planning Reference	Local Planning Authority	Address	Description of Project	Number of Residential Units	Commercial Floorspace	Approximate Distance from Site	Range - 4-10km to 0-4km (to filter)	Subject to EIA?	Planning Status	Tier 1 (most certain) to Tier 3 (least certain)	Construction Status (Expected Programme)	Carried through to Short List?	If 'No', why?
Nationally Significant Infrastructure Projects (NSIPs)													
TR010060	Essex County Council	A12 Chelmsford to A120 Widening Scheme.	National Highways. A12 Chelmsford to A120 Widening Scheme. Widening where necessary of the A12 between Chelmsford (junction 19) and the A120 (junction 25) from two to three lanes in each direction; improve junction 19 and 25; removal of junctions 20a, 20b and 23; move junction 21, 22 and 24 to make them all movement junctions and; create two bypasses	0	No	4km south east	4-10km	Yes	Submitted August 2022, Decision pending (examination closes July 2023)	Tier 1	Construction not yet commenced	No	Development is not in Zol of noise and climate change
EN010118	Braintree District Council	Longfield Solar Energy Farm Ltd.	Longfield Solar Energy Farm Ltd. A new solar photovoltaic array generating station, co-located with battery storage, together with grid connection infrastructure. The generating capacity will be up to 500MW	0	No	10.5km south west	4-10km	Yes	Submitted February 2022, Decision pending (Planning Inspectorate to submit recommendation April 2023)	Tier 1	Construction not yet commenced	No	Development is not in Zol of noise and climate change
Essex County Council (ECC)													
ESS/07/98/BTE	ECC	Bradwell Pit,Bradwell Quarry,Coggeshall Road,Bradwell,Braintree,CM77 8EP	Extraction of sand & gravel & restoration for agricultural use at the lower level, including new processing plant, haul road, landscaping improvements, to a junction with A120	0	No	Proximity to Site (see map)	0-4km	No	Permission Granted 1998	Baseline	Completed	No	Development already complete - forms part of baseline.
ESS/37/08/BTE	ECC	Rivenhall Airfield Recycling & Composting Facility,Silver End,Braintree	Development of an integrated Waste Management Facility comprising: Anaerobic digestion plant treating mixed organic waste, producing biogas converted to electricity through biogas generators; Materials Recovery Facility for mixed dry recyclable waste to recover materials e.g. paper, plastic, metals; Mechanical Biological Treatment facility for the treatment of residual municipal and residual commercial and industrial wastes to produce a solid recovered fuel; De-inking and pulping paper recycling facility to reclaim paper; Combined Heat and Power Plant utilising solid recovered fuel to produce electricity, heat and steam; Extraction of minerals to enable buildings to be partially sunken below ground level within the resulting void; Visitor / Education Centre; Extension to existing access road; Provision of offices and vehicle parking; Associated engineering works and storage tanks.	0	No	Proximity to Site (see map)	0-4km	Yes	Permission Granted 2010	Baseline	Completed	No	Development already complete - forms part of baseline.
ESS/37/08/BTE/NMA/2	ECC	Rivenhall Airfield Recycling & Composting Facility,Silver End,Braintree	to allow amended wording of condition 2 (applications details) Original Planning permission for: Integrated Waste Management Facility comprising: Anaerobic Digestion Plant treating mixed organic waste, producing biogas converted to electricity through biogas generators; Materials Recovery Facility for mixed dry recyclable waste to recover materials e.g. paper, plastic, metals; Mechanical Biological Treatment facility for the treatment of residual municipal and residual commercial and industrial wastes to produce a solid recovered fuel; De-inking and Pulping Paper Recycling Facility to reclaim paper; Combined Heat and Power Plant (CHP) utilising solid recovered fuel to produce electricity, heat and steam; extraction of minerals to enable buildings to be partially sunken below ground level within the resulting void; visitor/education centre; extension to existing access road; provision of offices and vehicle parking; and associated engineering works and storage tanks.	0	No	Proximity to Site (see map)	0-4km	No	Permission Granted 2009	Baseline	Completed	No	Development already complete - forms part of baseline.
ESS/24/14/BTE	ECC	Bradwell Quarry, Church Road, Bradwell, CM77 8EP, and land south of Cut Hedge Lane	Extraction of an estimated reserve of 3 million tonnes of sand and gravel (from Sites A3 and A4 as identified in the Minerals Local Plan 2014) and retention of existing access onto the A120, private haul road, sand and gravel processing plant, ready mixed concrete plant, bagging plant, dry silo mortar plant and water management system, internal haul roads and re-contouring of restoration levels of extraction areas (Sites R and A2) with restoration to a combination of agriculture, woodland,	0	No	Proximity to Site (see map)	0-4km	Yes	Permission Granted 2014	Baseline	Completed	No	Development already complete - forms part of baseline.
ESS/03/18/BTE	ECC	Bradwell Quarry, Church Road, Bradwell, CM77 8EP, and land east of Sheepecotes Lane	Extraction of 2 million tonnes of sand and gravel (from Site A5 as identified in the Essex Minerals Local Plan 2014) including the retention of the existing access onto the A120, the processing plant (including sand and gravel washing plant), office and weighbridge, ready mix concrete plant, bagging unit, DSM plant, water and silt management systems and extension of the internal haul road into Site A5 with restoration to agriculture and biodiversity (species rich grassland and wetland)	0	No	Proximity to Site (see map)	0-4km	Yes	Permission granted 2018	Baseline	Completed in March 2023	No	Development already complete - forms part of baseline.

ESS/32/11/BTE	ECC	Blackwater Aggregates, Bradwell Quarry, Church Road, Bradwell, Braintree, CM77 8EP	Extraction of an estimated reserve of 900,000 tonnes of sand and gravel (of which 750,000 tonnes already permitted for extraction under ESS/37/08/BTE) and retention of existing access onto the A120, private haul road, sand & gravel processing plant, ready mixed concrete plant, bagging plant, dry silo mortar plant and water management system, internal haul roads and recontouring of existing extraction area (known as Site R in Minerals Local Plan) with restoration	0	No	Proximity to Site (see map)	0-4km	Yes	Permission granted 2011	Baseline	Completed	No	Development already complete - forms part of baseline.
ESS/32/11/BTE/56/1	ECC	Blackwater Aggregates, Bradwell Quarry, Church Road, Bradwell, Braintree, CM77 8EP	Extraction of an estimated reserve of 900kt of sand and gravel and retention of existing access onto the A120, private haul road, sand and gravel processing plant, bagging plant, dry silo mortar plant and water management system, internal haul roads and recontouring of existing extraction area (known as Site R in Minerals Local Plan) with restoration to a combination of agriculture, woodland, nature conservation, water lagoons and to levels appropriate to safeguard implementation of planning permission ESS/37/08/BTE (Integrated Waste Management Facility). At Bradwell Quarry, Coggeshall Road, Bradwell, Near Braintree, Essex, and land south of Bradwell Quarry on part of Riverhall Airfield and east of Sheenocotes Lane	0	No	Proximity to Site (see map)	0-4km	No	Permission granted 2012	Baseline	Completed	No	Development already complete - forms part of baseline.
ESS/32/11/BTE/NMA1	ECC	Blackwater Aggregates, Bradwell Quarry, Church Road, Bradwell, Braintree, CM778EP	Extraction of an estimated reserve of 1 million tonnes of sand and gravel (of which 750,000 tonnes already permitted for extraction under ESS/37/08/BTE) and retention of existing access onto the A120, private haul road, sand & gravel processing plant, ready mixed concrete plant, bagging plant, dry silo mortar plant and water management system, internal haul roads and recontouring of existing extraction area (known as Site R in Minerals Local Plan) with restoration	0	No	Proximity to Site (see map)	0-4km	No	Permission Granted 2012	Baseline	Completed	No	Development already complete - forms part of baseline.
ESS/32/12/BTE	ECC	Bradwell Quarry, Coggeshall Road (A120T), Essex, Bradwell, United Kingdom	Continuation of extraction of an estimated reserve of 900,000 tonnes of sand and gravel and retention of existing access onto the A120, private haul road, sand and gravel processing plant, ready mixed concrete plant, bagging plant, dry silo mortar plant and water management system, internal haul roads and recontouring of existing extraction area (known as Site R in Minerals Local Plan) with restoration to a combination of agriculture, woodland, nature conservation, water lagoons and to levels appropriate to safeguard implementation of planning permission ESS/37/08/BTE (Integrated Waste Management Facility) permitted under Ref ESS/31/11/BTE without compliance with condition 9(d) (hours of operation of dry silo mortar plant) to allow orking 07:00 to 18:30 Monday to Friday and 07:00 to 13:00 Saturdays.	0	No	Proximity to Site (see map)	0-4km	No	Permission Granted 2012	Baseline	Completed	No	Development already complete - forms part of baseline.
ESS/12/20/BTE	ECC	Bradwell Quarry, Church Road, Bradwell, CM77 8EP, and land south of Cuthedge Lane	Extraction of 6.5 million tonnes of sand and gravel (from Site A7 as identified in the Essex Minerals Local Plan 2014) including the retention of the existing access onto the A120, the processing plant (including sand and gravel washing plant), office and weighbridge, ready mix concrete plant, bagging unit, DSM plant, water and silt management systems. In addition, extension of the internal haul road into Site A7 and access for private and support vehicles to the Site A7 contractors' compound via Woodhouse Lane and Cuthedge Lane. Restoration of Site A7 to agriculture and biodiversity (species rich grassland and wetland).	0	No	Proximity to Site (see map)	0-4km	Yes	Permission Granted 2020	Tier 1	Construction not yet commenced	Yes	
ESS/12/20/BTE/NMA1	ECC	Bradwell Quarry, Church Road, Bradwell, CM77 8EP, and land south of Cuthedge Lane	Non material amendment to allow amended details for the haul road crossing as shown on drawing A7-8 to allow widening of the concrete pad to include the public right of way crossing. The wording of conditions 2 and 39 of ESS/12/20/BTE to be amended to reflect the change in the drawing number	0	No	Proximity to Site (see map)	0-4km	No	Permission Granted 2023.	Tier 1	Construction not yet commenced	Yes	
ESS/01/19/BTE/SPO	ECC	Land North of Cuthedge Lane, Grange Farm, Coggeshall, CO6 1RE	EIA Scoping Opinion Request re: Creation of a passive flood alleviation scheme through the construction of a low level "on-line" embankment (or dam) across the River Blackwater and the creation of an "off-line" flood storage area and connection points within the flood plain of the Blackwater Valley which will be delivered through the phased extraction of approximately 13 million tonnes sand and gravel and the restoration of land for agricultural purposes with a wetland flood meadow using the existing access	0	No	1km north of Site boundary	0-4km	Yes (future)	Scoping Opinion issued 2019	Tier 2	TBC - no planning application submitted yet	No	Development is operational and is not in Zol of noise and climate change
ESS/39/14/BTE	ECC	Land at Colemans Farm, Little Braxted Lane, Rivenhall, Witham, Essex, CM8 3EX	Extraction of an estimated 2.5 million tonnes of sand and gravel together with the provision of an new access from Little Braxted Lane; and the installation/construction and operation of primary processing and ancillary facilities comprising washing and bagging plant, silt lagoons, weighbridge, site management office, mess room and maintenance workshop; with restoration to agriculture and water based nature conservation habitats	0	No	4.5km south of Site boundary	4-10km	Yes	Permission Granted July 2014	Baseline	Operational	No	Development is operational and is not in Zol of noise and climate change

ESS/10/18/BTE	ECC	Land at Coleman's Farm Quarry, Witham, Essex, CM8 3EX	Continuation of use of land for mineral extraction and ancillary use without compliance with Conditions 2 (Approved Details); 6 (Plant Site Layout) and 47 (Soil Storage Arrangements) of planning permission ESS/39/14/BTE granted for " Extraction of an estimated 2.5 million tonnes of sand and gravel together with the provision of a new access from Little Braxted Lane; and the installation/construction and operation of primary processing and ancillary facilities comprising washing and bagging plant, silt lagoons, weighbridge, site management office, mess room and maintenance workshop; with restoration to agriculture and water based nature conservation habitats" to enable the re-phasing of the working and restoration of the site, changes in soils bunds configuration and to provide car parking for visitors in the ancillary plant site area	0	No	4.5km south of Site boundary	4-10km	Yes	Permission Granted Jan 2019	Baseline	Operational	No	Development is operational and is not in Zol of noise and climate change
Braintree District Council (BDC)													
21/01878/FUL	BDC	Land East Of Periwinkle Hall Links Road Perry Green Bradwell Essex	Construction and operation of a solar photovoltaic farm, with battery storage and other associated infrastructure, including inverters, security cameras, fencing, access tracks and landscaping.	0	No	1.2km north west of Site boundary	0-4km	No	Permission granted Dec 2021	Tier 1	Not available, construction phases assumed to overlap with Development.	No	Development is not in Zol of noise and climate change
23/00360/FUL	BDC	Hangar 1 Rivenhall Airfield Sheepcotes Lane Silver End Essex CM8 3PJ	Provision of private access road to Sheepcotes Hangar across Bradwell Quarry to reinstate a means of access previously provided by the former airfield runway(s) and perimeter track(s)	0	No	380m west of the Site boundary	0-4km	No	Application submitted Feb 2023, Pending Decision.	Tier 1	Info on construction programme not available	No	Development is not in Zol of noise and climate change
21/00850/OUT	BDC	Land West Of Boars Tye Road Silver End Essex	Outline planning permission with all matters reserved apart from access, for up to 94 dwellings and new landscaping, open space, access, land for allotments and associated infrastructure.	94	No	1.7km west of Site boundary	0-4km	No	Refused Oct 2021, Appeal allowed.	Tier 1	Info on construction programme not available	No	Development is not in Zol of noise and climate change
21/01998/SCR	BDC	Land West Of Park Road Rivenhall Essex	Town & Country Planning Act 1990 (as amended), Town & Country Planning (Environmental Impact Assessment) Regulations 2017 - Screening Request (Regulation 6) - Proposed solar photovoltaic farm and associated infrastructure.	0	No	1.7km south west of Site boundary	0-4km	No	Validated June 2021, Decision Pending Jul 2021.	Tier 3	No planning app submitted since screening req. submitted 2021.	No	Development is Tier 3 status and not in Zol of noise and climate change
22/00860/FUL	BDC	Cressing Farm Witham Road Cressing Essex CM77 8PD	Development of equestrian facility including 28 stables, office/store, hay store, manege, horsewalker and associated parking and change of use of land to grazing paddocks.	0	No	3.1km south west of Site boundary	0-4km	No	Permission Granted Aug 2022	Tier 1	Info on construction programme not available	No	Development is not in Zol of noise and climate change
18/00920/FUL	BDC	Appletree Farm Polecat Road Cressing Essex	Demolition of existing buildings on site and erection of 78 residential dwellings with associated open space, landscaping, amenity space, car and cycle parking and other associated	78	No	3.3km west of Site boundary	0-4km	No	Permission Granted (with S106) Feb 2020.	Tier 1	Info on construction programme not available	No	Development is not in Zol of noise and climate change
18/00947/OUT	BDC	Land South Of Rickstones Road In The Parish Of Rivenhall Witham Essex	Outline application with all matters reserved for up to 58 dwellings including affordable homes, public space including local equipped area for play, sustainable drainage systems, landscaping including retention of Rickstones Road hedgerow on site and all associated development.	58	No	3.7km south of Site boundary	0-4km	No	Permission Granted (with S106) May 2018.	Baseline	Completed	No	Development already complete - forms part of baseline.
22/02283/FUL	BDC	Land North Of Colchester Road Witham Essex	Erection of two B8 (storage / distribution) units with office space and associated infrastructure.	0	Yes	4.5km south of Site boundary	4-10km	No	Validated Sept 2022, Pending consideration	Tier 1	Info on construction programme not available	No	Development is not in Zol of noise and climate change
21/03579/OUT	BDC	Land South West Of Coggeshall Road Kelvedon Essex	Outline planning application (with all matters reserved apart from access) for up to 600 dwellings, including up to 75 units sheltered housing accommodation, the proposed provision of a primary school, and provision of public open space including associated landscape planting with associated infrastructure, drainage measures, earthworks and provision of new footpath/cycleway route towards Coggeshall.	600	Yes	3.1km south east of Site boundary	0-4km	Yes	Validated Feb 2022, Pending consideration.	Tier 1	Anticipated to commence 2023, Complete by 2030.	No	Development is not in Zol of noise and climate change
16/00569/OUT	BDC	Land North East Of Inworth Road Feering Essex, E32:M35	Outline planning application to include up to 165 dwellings (C3), vehicular access from London Road, public open space, landscaping, associated infrastructure, drainage works and ancillary works. Detailed approval is sought for access arrangements from London Road, with all other matters reserved.	165	No	4.9km east of Site boundary	4-10km	No	Permission Granted (with S106) Dec 2017.	Tier 1	Construction underway.	No	Development is not in Zol of noise and climate change
21/00671/FUL	BDC	Development Land East Street Coggeshall Essex	Construction of 20 dwellings, new vehicular and pedestrian access to East Street, internal access road, garages, parking spaces, private open space, amenity space and provision of foul and surface water drainage and landscaping.	20	No	3.8km north east of Site boundary	0-4km	No	Validated March 2021, Pending consideration.	Tier 1	Construction not yet commenced.	No	Development is not in Zol of noise and climate change
17/02246/OUT	BDC	Land North Of Colchester Road Coggeshall Essex	Outline application for the construction of up to 300 dwellings (including up to 40% affordable) nursery/community facilities (420m2) and provision of access, roads, drainage infrastructure, open space and strategic landscaping. Demolition of existing garage/ workshop building. Variation would allow for: - Alterations to Phasing Plan.	300	Yes	4.1km north east of Site boundary	4-10km	No	Permission Granted (with S106) April 2019.	Tier 1	Construction not yet commenced.	No	Development is not in Zol of noise and climate change
21/03735/FUL	BDC	Land West Of Park Road Rivenhall Essex	Installation of solar farm and associated development.	0	No	1.7km south of Site boundary	0-4km	No	Validated Jan 2022, Pending consideration.	Tier 1	Construction not yet commenced. 4-month build period once	No	Development is not in Zol of noise and climate change
21/01878/FUL	BDC	Land East Of Periwinkle Hall Links Road Perry Green Bradwell Essex	Construction and operation of a solar photovoltaic farm, with battery storage and other associated infrastructure, including inverters, security cameras, fencing, access tracks and landscaping.	0	No	1.8km north west of Site boundary	0-4km	No	Permission granted Dec 2021.	Tier 1	Construction not yet commenced. 16 weeks from commencement.	No	Development is not in Zol of noise and climate change
22/01061/SCR	BDC	Land West Of Braintree Road Cressing Essex	Town & Country Planning Act 1990 (as amended), Town & Country Planning (Environmental Impact Assessment) Regulations 2017 - Screening Request (Regulation 6) - Solar Farm	0	No	3.5km north west of Site boundary	0-4km	No	Screening Opinion issued Sept 2022.	Tier 3	No application submitted yet.	no	Development is Tier 3 status and not in Zol of noise and climate change

19/00739/REM	BDC	Land Adjacent To Braintree Road Crossing Essex	Development of up to 225 residential dwellings; associated access (including provision of a new roundabout on Braintree Road); public open space; play space; pedestrian and cycle links; landscaping; and provision of land for expansion of <u>Cressing Primary School</u>	225	No	3.9km west of Site boundary	0-4km	No	Permission Granted Sep 2019	Tier 1	Construction underway.	no	Development is not in Zol of noise and climate change
21/00749/FUL	BDC	Land West Of Mill Lane Crossing Essex	Development of 80 no. age-restricted (to over-55s) bungalows; with provision of c. 4 ha of public informal open space incorporating, allotments, dog exercising area and potential land for <u>community facility</u> .	80	No	4.6km west of Site boundary	4-10km	No	Validated March 2021, pending consideration.	Tier 1	Construction not yet commenced.	no	Development is not in Zol of noise and climate change
19/00026/FUL	BDC	Land At Conrad Road Witham Essex	Full planning application for the erection of 150 residential dwellings with associated infrastructure and landscaping	150	No	3.7km south of Site boundary	0-4km	No	Permission Granted (with S106) Oct 2020	Tier 1	Construction underway.	no	Development is not in Zol of noise and climate change
20/02060/OUT	BDC	Phase 4 Land North East Of Rectory Lane Rivenhall Essex	Outline application with all matters reserved for up to 230 dwellings including affordable homes; public open space including sports pitches and facilities, neighbourhood equipped area for play, parkland and alternative natural greenspace, vehicular access via Forest Road and Evans way, a bus, cycle and pedestrian connection to Rickstones road, sustainable drainage systems, landscaping and all associated infrastructure and <u>development</u> .	230	No	3.4km south of Site boundary	0-4km	No	Application Refused March 2022, Appeal allowed.	Tier 1	Construction not yet commenced.	no	Development is not in Zol of noise and climate change
12/01472/FUL	BDC	Land North-west Of Highfields Farm Highfields Lane Kelvedon Colchester Essex	Construction of a 36.54 hectare solar park, to include the installation of solar panels to generate electricity, with transformer housings, security fencing and cameras, landscaping and other associated works	0	No	5.5km south east of Site boundary	4-10km	No	Permission Granted Sept 2013	Baseline	Construction complete.	No	Development is operational and is not in Zol of noise and climate change

Following Stage 1, applicants should apply threshold criteria to the long list, in order to establish a shortlist of other existing development and/or approved development and to ensure that the cumulative assessment is proportionate.

The criteria should address the following:

-Temporal scope: The applicant may wish to consider the relative construction, operation and decommissioning programmes of the 'other existing development and/or approved development' identified in the ZOI together with the NSIP programme, to establish whether there is overlap and any potential for interaction.

-Scale and nature of development: The applicant may wish to consider whether the scale and nature of the 'other existing development and/or approved development' identified in the ZOI are likely to interact with the proposed NSIP. Statutory definitions of major development and EIA screening thresholds may be of assistance when considering issues of scale.

-Other factors: The applicant should consider whether there are any other factors, such as the nature and/ or capacity of the receiving environment that would make a significant cumulative effect with 'other existing development and/or approved development' more or less likely and may consider utilising a source-pathway-receptor approach to inform the assessment.

Planning Reference	Local Planning Authority	Address	Description of Project	Number of Residential Units	Commercial Floorspace	Approximate Distance from Site	Range - 4-10km to 0-4km (to filter)	Setting From Site	Subject to EIA?	Planning Status	Tier 1 (most certain) to Tier 3 (least certain)	Construction Status (Expected Programme)	Carried through to Short List?	If 'No', why?
ESS/12/20/BTE	ECC	Bradwell Quarry, Church Road, Bradwell, CM77 8EP, and land south of Cuthedge Lane	Extraction of 6.5 million tonnes of sand and gravel (from Site A7 as identified in the Essex Minerals Local Plan 2014) including the retention of the existing access onto the A120, the processing	0	No	Proximity to Site (see map)	0-4km		Yes	Permission Granted 2020	Tier 1	Construction not yet commenced	Yes	
ESS/12/20/BTE/NMA1	ECC	Bradwell Quarry, Church Road, Bradwell, CM77 8EP, and land south of Cuthedge Lane	Non material amendment to allow amended details for the haul road crossing as shown on drawing A7-8 to allow widening of the concrete pad to include the public right of way crossing	0	No	Proximity to Site (see map)	0-4km		No	Permission Granted 2023.	Tier 1	Construction not yet commenced	Yes	
23/00360/FUL	BDC	Hangar 1 Rivenhall Airfield Sheepcotes Lane Silver End Essex CM8 3PJ	Provision of private access road to Sheepcotes Hangar across Bradwell Quarry	0	No	380m west of the Site boundary	0-4km		No	Application submitted Feb 2023, Pending Decision.	Tier 1	Info on construction programme not available	Yes	To be confirmed during PIER stage

Appendix D – Proposed Location of Specified information in the ES

Table 1: Location of Specified Information in the ES

Specified Information in Regulation 18 of the EIA Regulations		Location within ES
3.		
(a)	A description of the proposed development comprising information on the site, design, size and other relevant features of the development.	Chapter 3: Description of the Proposed Development
(b)	A description of the likely significant effects of the proposed development on the environment.	Technical Chapter; Volume II
(c)	A description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment.	Chapter 3: Description of the Proposed Development; Technical Chapters
(d)	A description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment.	Chapter 4: Alternatives
(e)	A non-technical summary of the information referred to in subparagraphs (a) to (d).	Provided as a standalone document which forms part of the ES.
5		
(b).	The environmental statement must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.	Chapter 1: Introduction

Specified Information in Part 1 and Part 2 of the Schedule 4 of the EIA Regulations

Location within ES

1. Description of the Development, including in particular:

Specified Information in Part 1 and Part 2 of the Schedule 4 of the EIA Regulations

Location within ES

(a)	A description of the location of the Development	Chapter 2: Existing Site and Consented Scheme
(b)	A description of the physical characteristics of the whole development including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases.	Chapter 5: Description of the Proposed Development
(c)	A description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used.	Chapter 5: Description of the Proposed Development
(d)	An estimate, by type and quantity, of expected residues and emissions (such as water, air and soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.	Chapter 5: Description of the Proposed Development
2.	A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	Chapter 4: Alternatives
3.	A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.	Technical Chapters
4.	A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material	Chapter 6: EIA Methodology; Technical Chapters

Specified Information in Part 1 and Part 2 of the Schedule 4 of the EIA Regulations

Location within ES

	<p>assets, cultural heritage, including architectural and archaeological aspects, and landscape.</p>	
<p>5.</p>	<p>A description of the likely significant effects of the development on the environment resulting from, inter alia:</p> <ul style="list-style-type: none"> (a) the construction and existence of the development, including, where relevant, demolition works; (b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; (d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources; (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; and (g) the technologies and the substances used. <p>The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(a) and Directive 2009/147/EC(b).</p>	<p>Technical Chapters</p>
<p>6.</p>	<p>A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.</p>	<p>Under ‘Assumptions and Limitations’ within ‘Assessment Methodology’ section of Technical Chapters as relevant.</p>

Specified Information in Part 1 and Part 2 of the Schedule 4 of the EIA Regulations

Location within ES

7.	A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.	Technical Chapters; Chapter 8: Summary of Mitigation, Monitoring and Residual Effects
8.	A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU(c) of the European Parliament and of the Council or Council Directive 2009/71/Euratom(d) or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	Scoped out of EIA as discrete assessment. Covered in technical Chapters (as required)
9.	A non-technical summary of the information provided under paragraphs 1 to 8.	Provided as a standalone document which forms part of the ES.
10.	A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.	Under 'References' section of each Technical Chapter

References

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