

Indaver Rivenhall IWMF DCO

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure)

Regulations 2009

ENVIRONMENTAL STATEMENT [PINS Ref: EN0101038]

ES NON-TECHNICAL SUMMARY

Document Reference: EN0101038/APP/6.3

Revision Number 1.0

APFP Regulation 5(2)(a)

November 2023

Indaver Rivenhall Ltd

Leading the field in
sustainable waste
management.

Glossary

Applicant	The Environmental Statement (ES) was prepared on behalf of Indaver Rivenhall Limited (referred to as the 'Applicant').
Actuators	The component in any machine or device enabling physical movement. This converts energy (often electrical, air, or hydraulic) into a mechanical force.
Baseline	Studies of existing, current environmental conditions. These help establish the baseline (current) conditions against which any future changes can be measured or predicted against.
Consented Scheme	Proposed development of an integrated waste management facility and associated works (Planning application Ref: ESS/34/15/BTE, as amended by ESS/34/15/BTE/NMA1, ESS/34/15/BTE/NMA2, ESS/34/15/BTE/NMA3, ESS/34/15/BTE/NMA4, ESS/34/15/BTE/NMA5 and ESS/34/15/BTE/NMA6).
Conservation Area	An area designated by the Local Authority as being of special architectural or historic interest under the provisions of the Planning (Listed Buildings and Conservation Areas) Act 1990, the character or appearance of which it is desirable to preserve or enhance.
Control Valves	Control valves are electronic components that monitor and regulate the rotational speed of the turbine.
Environmental Impact Assessment	A process by which information about the environmental effects of a project is collected, both by the developer and from other sources, and taken into account by the relevant decision-making body before a decision is given on whether the development should go ahead.
EIA Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
EIA Scoping	An initial stage in determining the nature and potential scale of the environmental impacts arising from the Proposed Development, and assessing what further studies are required to establish their significance.
EIA Scoping Opinion	A written statement of the opinion of the Planning Inspectorate as to the information to be provided in the Environmental Statement.
Environmental Statement	A statement that includes such information that is reasonably required to assess the environmental effects of a development.

Integrated Waste Management Facility (or IWMF)	A consented building that incorporates waste handling space, including a Materials Recovery Facility, a Mechanical Biological Treatment Facility, an Anaerobic Digestion Plant, De-inking and Pulping Paper Recycling Facility, and an Energy from Waste plant.
Listed Building	A building of special architectural or historic interest which is included in a list made or approved by the Secretary of State for Culture Media and Sport under the provisions of the Planning (Listed Buildings and Conservation Areas) Act 1990.
Local Nature Reserve	Statutory designations comprising wildlife or geological features that are of special interest locally, made by principal local authorities under Section 21 of the National Parks and Access to the Countryside Act 1949 (as amended).
Mitigation	Any process, activity or thing designed to avoid, reduce or remedy adverse environmental impacts likely to be caused by a development project.
Mitigating Factor	A matter to be taken into account as a benefit on balance to offset against any harmful impact.
Mitigation Measure	Measure aiming at reducing an adverse environmental effect.
Non-technical Summary	A summary of the Environmental Statement in 'non-technical language'.
On-site	Taking place, or available, on the Site.
Off-site	Referring to a location other than the Site.
Ordnance Datum	Land levels are measured relative to the average sea level at Newlyn, Cornwall. This average level is referred to as 'Ordnance Datum'.
Pathways	The routes by which impacts are transmitted through air, water, soils or plants and organisms to their receptors.
Preliminary Environmental Information	Defined in the EIA Regulations as information referred to in regulation 14(2) which has been compiled by the Applicant; and is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development).
The 'Proposed Development'	The proposed implementation of either Work Option.

Residual Impacts	Those impacts of the development following implementation of any mitigation proposals.
Scheduled Monument	A 'nationally important' archaeological site or historic building, given protection against unauthorised change.
The 'IWMF Site'	The area of development defined by the Consented Scheme.
The 'Site'	The Site is approximately rectangular in shape and covers the extent of the consented IWMF building footprint, as defined by the Consented Scheme. The Site is located within part of the IWMF Site.
Site of Special Scientific Interest	The land notified as a Site of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act (1981), as amended. SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features.
Statement of Community Consultation	A document setting out how an applicant will consult with local communities on the proposals associated with a DCO application.
Topography	The natural and man-made features of an area collectively.
Work Option(s)	<p>Work Option No.1 – an extension to the existing generating station at the Rivenhall Integrated Waste Management Facility (i.e. the Energy from Waste plant) comprising mechanical modifications to the actuated steam turbine inlet control valves to allow steam capacity to be increased, with the effect that the extended Energy from Waste plant would have a gross installed generating capacity of over 50MW.</p> <p>Work Option No.2 – an extension to the existing generating station at the Rivenhall Integrated Waste Management Facility (i.e. the Energy from Waste plant) comprising the installation of unrestricted actuated steam turbine inlet control valves with a capacity of over 50MW, with the effect that the extended Energy from Waste plant would have a gross installed generating capacity of over 50MW.</p>

Abbreviations

AOD	Above Ordnance Datum
AQMA	Air Quality Management Area
BDC	Braintree District Council
CA	Conservation Area
CEMP	Construction Environmental Management Plan
CO ₂	Carbon Dioxide
DCO	Development Consent Order
EA	Environment Agency
ECC	Essex County Council
EfW	Energy from Waste
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
ES	Environmental Statement
GHG	Greenhouse Gas
Ha	Hectares
HGV	Heavy Goods Vehicles
IWMF	Integrated Waste Management Facility
LPA	Local Planning Authority
LNR	Local Nature Reserve
km	Kilometres
m	Metres
MW	Megawatt
NPPF	National Planning Policy Framework

NPS	National Policy Statement
NSR	Noise Sensitive Receptor
PEI	Preliminary Environmental Information
PRoW	Public Right of Way
SSSI	Site of Special Scientific Interest
SoCC	Statement of Community Consultation
SoS	Secretary of State
TCPA	Town and Country Planning Act
TPO	Tree Preservation Order

Contents

Contents	vii
1 Introduction	1
2 Existing Site Conditions and Consented Scheme	3
3 Proposed Development and Construction	15
4 Alternatives	18
5 Consultation	20
6 Methodology	22
7 Climate Change and Greenhouse Gases	25
8 Noise and Vibration	26
9 Summary of Residual Environmental Effects	27
References	28

Figures

Figure 1.1	DCO Consenting Process
Figure 1.2	Site Location Plan
Figure 1.3	Indicative Planning Application Site Boundary
Figure 2.1	Excavation, soil nailing and piling works of the Consented Scheme
Figure 2.2	Environmental Sensitivities
Figure 2.3	Consented Scheme Layout
Figure 2.4	Consented Scheme Front Elevation
Figure 6.1	Cumulative Scheme Extent and Site Referencing

1 Introduction

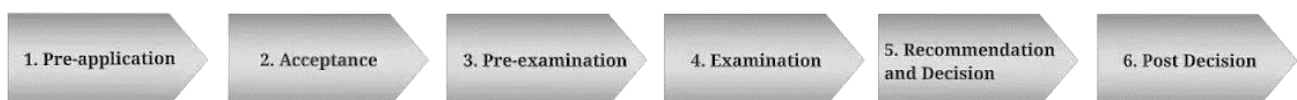
Background

- 1.1 This Non-Technical Summary presents a summary of the findings of an Environmental Statement ('ES') that has been prepared on behalf of Indaver Rivenhall Limited ('Applicant') for the Rivenhall Integrated Waste Management Facility ('IWMF') Development Consent Order ('DCO'). The Applicant is applying for development consent to increase the generating capacity of the consented Rivenhall IWMF ('Proposed Development').
- 1.2 Rivenhall IWMF was granted planning permission in February 2016¹ under the Town and Country Planning Act 1990¹ ('TCPA'). The permission allows for the construction and installation of an IWMF that includes plant that produces Energy from Waste ('EfW plant'), with a generating capacity of up to 49.9 megawatts ('MW'), together with other waste management processes (this is referred to as the 'Consented Scheme').

Development Consent Order – What is it?

- 1.3 A DCO is the means of obtaining consent to construct and maintain developments categorised as Nationally Significant Infrastructure Projects ('NSIPs'). These are projects of national importance, as defined by the Planning Act 2008².
- 1.4 The Proposed Development is considered an NSIP as (when extended) the EfW plant would have a generating capacity exceeding 50MW. Construction of an NSIP requires the grant of a DCO. An application for a DCO is submitted to the Planning Inspectorate acting on behalf of the Secretary of State.
- 1.5 The DCO process is comprised of six primary stages, as set out in Figure 1.1.

Figure 1.1: DCO Consenting Process



- 1.6 The Proposed Development is 'EIA development' as defined by the EIA Regulations³, and so requires an Environmental Impact Assessment ('EIA'). EIA is a process of evaluating the likely environmental impacts of a proposed project or development prior to decision making. This ES presents the findings of the EIA undertaken by the Applicant for the Proposed Development. The ES advances the content of the PEI Report (prepared in support of the formal consultation period, June to August 2023) which was used for consultation purpose at the pre-application stage (stage 1 in

¹ 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, ESS/34/15/BTE/NMA4, ESS/34/15/BTE/NMA5 and ESS/34/15/BTE/NMA6 [correct as of 07/11/2023].

Figure 1.1). The ES incorporates the responses from consultation and results of the surveys and assessments undertaken.

Who is the Applicant?

- 1.7 The Applicant, Indaver Rivenhall Limited, is a company whose ultimate parent company is Indaver Holdings NV, a European waste management company. Indaver Holdings NV and its subsidiaries are active in the UK and elsewhere in Europe, with facilities and operations in Belgium, Germany, Ireland, the Netherlands, Italy, France, Spain and Portugal. Indaver Holdings NV and its subsidiaries provide high-quality sustainable waste management solutions to large scale industry, waste collectors, and public authorities.

Where is the Site?

- 1.8 The development site ('Site') is located on part of the wider Rivenhall IWMF site ('IWMF Site') at the former Rivenhall Airfield, north west of Kelvedon in Essex. Further details are provided in Section 2. Figures 2.1 and 2.2 later in the report show the Site location and Site boundary (defined as the 'Order limits' for this application).

What is the Proposed Development being applied for through the DCO?

- 1.9 The Proposed Development would involve works to the steam inlet control valves of the EfW plant to enable the generating capacity to exceed 49.9MW through one of two work options. Each option would enable the EfW plant to generation over 50MW of electricity through increasing the maximum amount of steam which reaches the consented steam turbine.
- 1.10 Further details on the Proposed Development are provided in Section 3.

What is an EIA and ES?

- 1.11 The ES describes the Proposed Development, the existing and future baseline conditions and provides an assessment of the likely environmental effects of the Proposed Development and their significance. In accordance with the EIA Regulations, the ES considers the significant effects of all stages of the Proposed Development, including construction and operation (where applicable). The ES comprises:
- Volume I: ES Chapters;
 - Volume II: Appendices; and
 - ES Non-Technical Summary (this document).

2 Existing Site Conditions and Consented Scheme

Where is the Site and what is its extent?

2.1 The Site is located north west of Kelvedon, approximately 4.5km east of Braintree, 3km south east of Bradwell village, 1km to the north east of Silver End and 3km south west of Coggeshall. The Site covers an area of approximately 5.5ha, as shown in Figures 2.1 and 2.2.

Figure 2.1: Site Location Plan

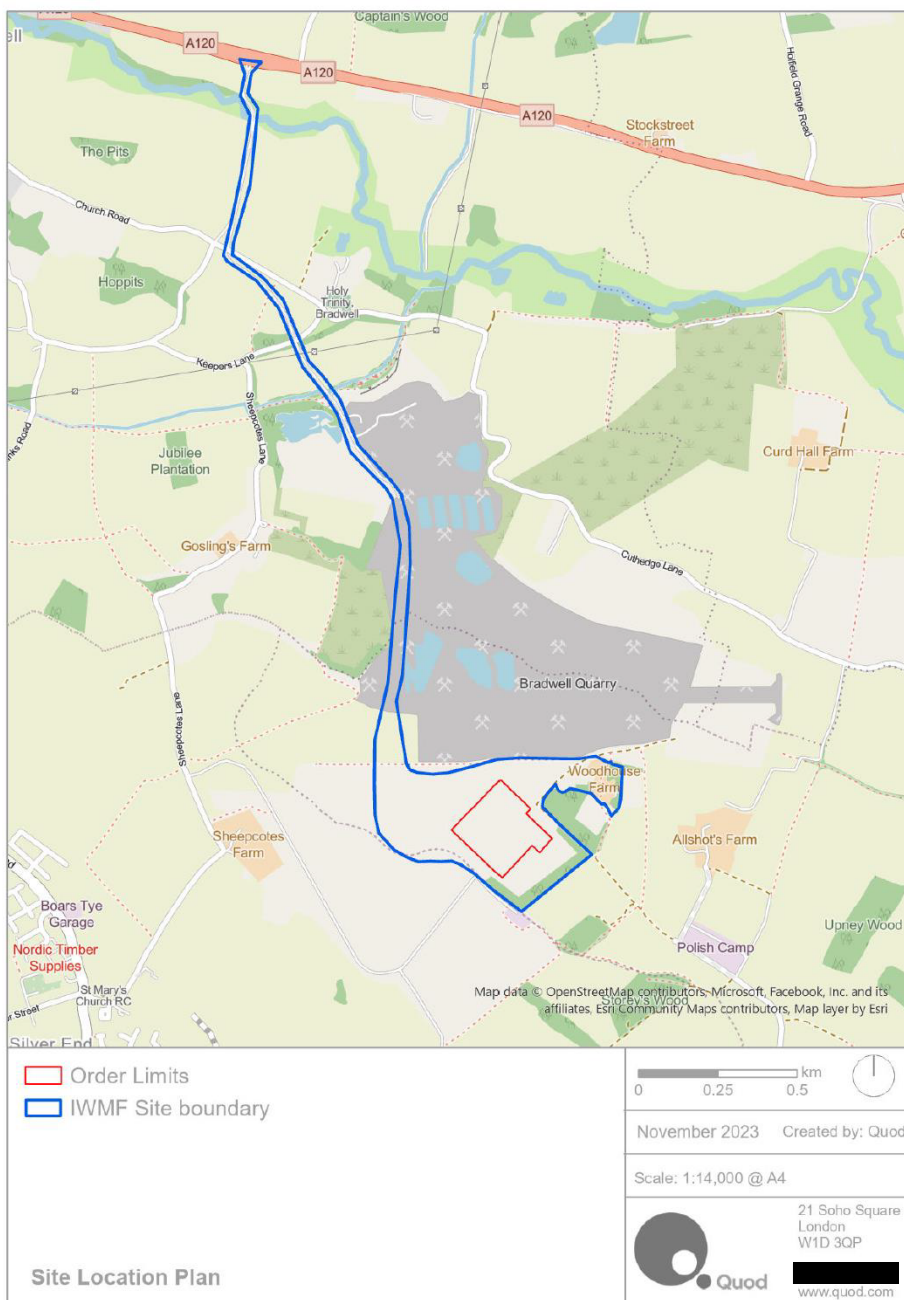


Figure 2.2: Planning Application Site Boundary



Maxar, Microsoft

-  Order Limits
-  IWMF Site boundary



November 2023 Created by: Quod

Scale: 1:6,000 @ A4

Order Limits



21 Soho Square
London
W1D 3QP

www.quod.com

What does the Site include?

- 2.2 The Site is located within part of the IWMF Site, which is situated on land that was formerly part of Bradwell Quarry. The Site is approximately rectangular in shape as it covers the extent of the consented IWMF building footprint. The Site currently comprises a construction site. Construction works associated with the Consented Scheme are underway on the Site, including excavation, soil nailing, piling works, and construction of building cores, as shown in Figure 2.3.

Figure 2.3: Construction Status of the Consented Scheme



What does the IWMF Site include?

- 2.3 The majority of the IWMF Site comprises hardstanding following quarry restoration works and commencement of initial construction works associated with the Consented Scheme. Development platforms and access routes have been created through the construction area of the IWMF Site. Woodhouse Farm and its associated structures in the south east have been retained.

How is the IWMF Site (and Site) accessed and what is the nature of the internal routes?

- 2.4 The access route to the IWMF Site comprises an existing two-way access road from the A120 to the north. This is shared with the existing Bradwell Quarry and has junctions with Church Road and Ash Lane along its length.
- 2.5 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 (see Figure 2.4).

What is in the surrounding area?

- 2.6 Except for the quarry, the Site is located within a predominantly rural area, comprising large arable fields. A small industrial estate is located approximately 400m to the south east on Allshots Farm.
- 2.7 The nearest residential property is The Lodge, Woodhouse Lane, approximately 425m to the east of the Site. The only other residential properties located within a 1km radius of the Site are Sheepcotes Farm and Haywards, approximately 750m west and 950m north east from the Site boundary respectively.

What are the environmental sensitivities?

The Site

- 2.8 Figure 2.4 identifies the key environmental sensitivities within and close to the Site.
- 2.9 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. The closest listed buildings are those associated with Woodhouse Farm which form part of the IWMF Site. Otherwise, there are three Grade II Listed heritage 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. There are no nationally designated Scheduled Monuments within the Site, nor does the Site lie in an Archaeological Priority Area.
- 2.10 The Site is not subject to any designations for nature conservation². 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.
- 2.11 Based on the Environment Agency flood maps, the Site is shown to be located within an area at low risk of flooding (Flood Zone 1) and has a low probability of surface water flooding.
- 2.12 There are no Air Quality Management Areas, defined as areas identified as having poor air quality, on or in the vicinity of the Site or its associated access route.

The IWMF Site

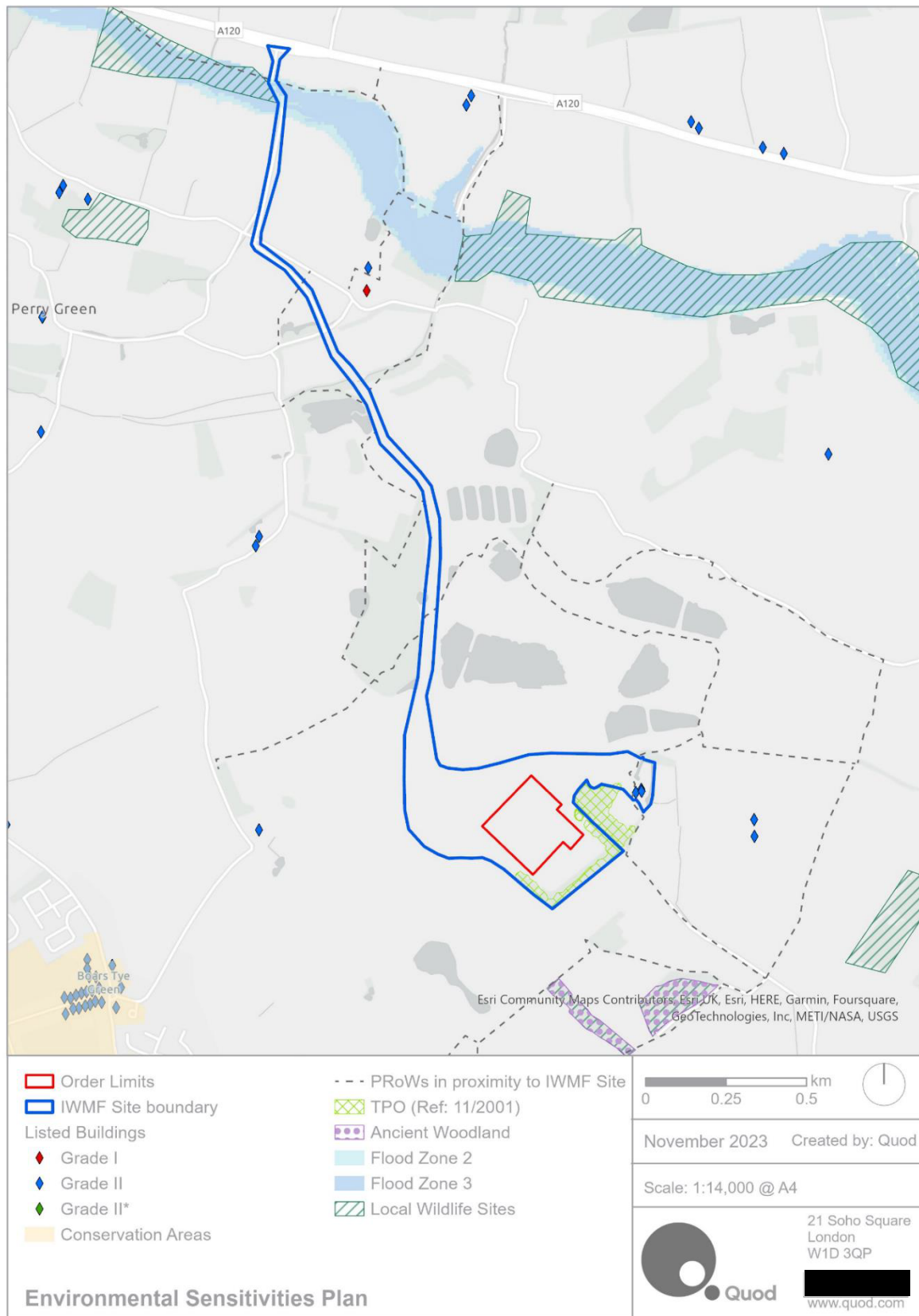
- 2.13 As illustrated on Figure 2.4, the IWMF Site is not subject to any statutory or non-statutory designations for nature conservation or heritage. The listed buildings associated with Woodhouse Farm are encompassed by the IWMF Site boundary. A

² The Site does not fall within the boundaries of any Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Sites of Special Scientific Interest (SSSI), Natural Nature Reserves (NNR) or Local Nature Reserves (LNR).

number of other Grade II listed buildings are in proximity to the IWMF Site's access road, with the closest being the ancillary buildings associated with Bradwell Hall located 200m east. The Grade I listed Parish Church of the Holy Trinity is located circa 170m east of the IWMF Site's access road.

- 2.14 In addition to the ecological designated sites described in paragraph 2.10, the Blackwater Plantation LWS borders the western boundary of the IWMF Site's access route boundary.
- 2.15 The River Blackwater, identified by the Environment Agency as a 'Main River', intersects the northern part the access route associated with the IWMF Site. Immediately surrounding this watercourse, the area is shown to be located within Flood Zone 3 with a high probability of surface water flooding. The rest of the IWMF Site is in an area of low risk of flooding (Zone 1) with low/very low probability of surface flooding.

Figure 2.4: Environmental Sensitivities



What is the Consented Scheme?

2.16 The Consented Scheme is the proposed development of an IWMF, principally comprising a materials recovery facility, biological treatment plants, and an EfW plant. The Consented Scheme also permits the development of a De-inking and Pulping Paper Recycling Facility. It also seeks to restore the Woodhouse Farm buildings which have heritage value as an educational visitor centre, offices and museum. Figure 2.5 shows the layout of the Consented Scheme within the IWMF Site.

Figure 2.5: Consented Scheme Layout



What is the Energy from Waste Process used in the Consented Scheme?

- 2.17 Waste is delivered to the reception hall, tipped into a bunker and then transferred from the bunker to the furnace, where it is combusted³. Air for combustion is extracted from the reception hall and bunker to avoid the release of odours.
- 2.18 The combustion of waste leads to the generation of gases, which are maintained at high temperatures (more than 850°C for more than two seconds) to ensure complete combustion. These gases pass through the boiler where the heat from the gases is used to generate steam. The cooled gases are then passed through a treatment system, which reduces the concentrations of pollutants in the gases to well below the permitted emission levels set by an environmental permit. The cleaned gases are released to the atmosphere via a chimney stack.
- 2.19 The high pressure, high temperature steam which has been generated can then either be sent to a steam turbine to generate electricity or can bypass the turbine and enter the air-cooled condenser. The high pressure, high temperature steam which passes through the turbine expands and cools as it passes through the turbine and is converted to low pressure steam. Then, this low pressure steam (together with the steam which has bypassed the turbine) is condensed to water in the air-cooled condenser. The water is returned to the boiler to be turned into high pressure steam again. Whether the steam is fed into the turbine or immediately recirculated without passing through the turbine is controlled by a set of control valves.

What will the Consented Scheme look like?

- 2.20 The consented IWMF building which forms part of the Consented Scheme 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 (see Figure 2.6). It will be vegetated to provide a green roof that will enhance biodiversity and optimise drainage. A 7m diameter stainless steel chimney will extend 35m above ridge height. The windows will be fitted with louvres⁴ and directional outdoor lighting used to minimise light escaping into the wider landscape. The consented IWMF building would not be changed by the Proposed Development.

³ Combustion is defined as the process of burning something.

⁴ A window blind or shutter with adjustable horizontal slats that are angled to admit light and air, but to keep out rain and direct sunshine.

Figure 2.6: Consented Scheme Front Elevation



How will the Consented Scheme be connected to the National Grid?

2.21 The Applicant has entered a contract with UK Power Networks (UKPN) for a 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 a substation at Braintree. The connection of the Consented Scheme to the National Grid would not be changed by the Proposed Development.

How will waste be managed in the Consented Scheme?

2.22 The Consented Scheme will receive a variety of wastes from Essex and surrounding counties and process them through a range of treatment routes.

2.23 Unloading of waste will take place within reception halls in a controlled environment. Roller shutter doors will close automatically when not in use to minimise potential dust and odour emissions. Re-useable recyclate⁵ 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.

2.24 The total waste inputs of the Consented Scheme are limited to a maximum of 853,000 tonnes per year of municipal solid waste and commercial and industrial waste. The total waste input for the operational Consented Scheme would not be changed by the Proposed Development.

How will water and drainage be managed in the Consented Scheme?

2.25 Water is needed by the IWMF for a number of elements such as boilers and sprinklers. There is no discharge of processed water or trade effluent from the facility. Water supply to the Site is provided via an existing mains water connection. Two surface water collection lagoons – Upper Lagoon and New Field Lagoon – have been developed as part of the Consented Scheme and the restoration of the adjacent quarry to store water. The

⁵ Recyclate is defined as raw material sent to, and processed in, a waste recycling plant or materials recovery facility.

water and drainage systems of the Consented Scheme would not be changed by the Proposed Development.

What landscaping will be implemented within the Consented Scheme?

- 2.26 The majority of the IWMF Site is clear of vegetation because of the former quarrying activities. Existing trees line the north eastern, south eastern and south western borders of the IWMF building. These will be retained and enhanced as part of the Consented Scheme with additional areas of mixed woodland planting to the north and north west. Trees and woodland/scrub will be retained along parts of the east and south eastern IWMF Site boundaries. In addition, areas of mixed shrub or grassland planting will be implemented along the access road.
- 2.27 The areas of existing woodland surrounding Woodhouse Farm have been retained and enhanced, with planting and landscaping works to be carried out along the western boundary of Woodhouse Farm, providing a screen between the proposed visitor/coach park and the IWMF building. Areas of open habitat were established adjacent to Woodhouse Farm for Great Crested Newts and a hedgerow has been relocated. A group of trees located immediately along the eastern and southern boundaries of the IWMF Site have a Tree Protection Order ('TPO'⁶) and have been retained. The landscaping of the Consented Scheme would not be changed by the Proposed Development.

How will the Consented Scheme be accessed?

- 2.28 Access to the IWMF Site and 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. The access to the Consented Scheme would not be changed by the Proposed Development.

Construction of the Consented Scheme

- 2.29 Construction works and commissioning of the EfW plant (which is the part of the Consented Scheme which would be changed by the Proposed Development) have commenced and are expected to last until around November 2025, with testing continuing until circa May 2026.

What are the key construction activities?

- 2.30 Construction works comprise levelling of the IWMF Site, extending and upgrading proposed access roads, formation of the proposed lagoon, construction of the IWMF building, installation of the grid connection, associated facilities and parking (including the visitor centre and education centre), and landscaping.

⁶ TPOs are orders made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity.

2.31 The major engineering works completed to date for the Consented Scheme have been associated with excavation, soil stability and foundation works (see Figure 2.3). These works have resulted in further excavation works to the quarrying restoration activities and have been undertaken to help minimise visual impacts.

What measures are in place to reduce construction-related environmental effects of the Consented Scheme?

2.32 A Construction Environmental Management Plan ('CEMP') defines the site-specific construction management and mitigation measures being applied to reduce the potential for significant environmental effects. A CEMP was prepared by the contractor for the initial enabling work phases of the Consented Scheme. CEMPs will be developed for later phases.

Operation of the Consented Scheme

2.33 The operational IWMF will involve the processing and treatment of wastes, and combustion of residual wastes to generate hot flues gases and generate electricity.

2.34 The operational hours 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.

2.35 Permitted HGV movements for vehicle traffic associated with incoming waste and departure of outgoing recycled, composted materials, ash and residues are as follows:

- 404 HGV movements (202 in and 202 out) per day (Monday to Friday);
- 202 HGV movements (101 in and 101 out) per day (Saturdays); and
- No movements on Sundays, Public or Bank Holidays, except for clearances from Household Waste Recycling Centres⁷ between 10:00 and 16:00 hours.

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

Decommissioning of Consented Scheme

2.37 A Closure Plan will be prepared at the appropriate time when decommissioning of the Consented Scheme is required.

⁷ As required by the Waste Disposal Authority.

3 Proposed Development and Construction

What would the Proposed Development deliver?

- 3.1 The Applicant is applying for a DCO to increase the generating capacity of the consented EfW plant which forms part of the Consented Scheme.
- 3.2 The Proposed Development would extend the generating capacity of the EfW plant to greater than 50MW. This would be achieved by the implementation of an engineering operation that would allow a larger proportion of steam generated in the boiler to reach the electricity-generating turbine. It is indicatively assumed that the Proposed Development would allow for the EfW plant to operate at a generating capacity between 60 and 65MW.
- 3.3 The Proposed Development would only comprise engineering works carried out internally within the consented IWMF building. No external works are required.
- 3.4 The increased capacity would be achieved through the implementation of one of two Work Options, both of which involve the alteration of valves within the EfW plant. This would be completed through implementing one of two development work options depending on the timing that the DCO is granted⁸, as follows:
 - **Work Option No.1** – Mechanical modifications to the installed control valves to allow steam capacity to be increased; or
 - **Work Option No.2** – Installation of unrestricted control valves.

What will the Engineering Works comprise?

- 3.5 Under Work Option No.1, qualified engineers would carry out the following steps to remove the mechanical stops from the inlet control valves installed as part of the Consented Scheme:
 - Shut down the turbine unit installed as part of the Consented Scheme for a few days. Waste could continue to be combusted with all steam bypassing the turbine.
 - Remove the mechanical limitation in the installed inlet control valve actuators.
 - Adapt the control system to operate without the mechanical limitation.
 - Recommission the turbine unit with the higher capacity.

⁸ The option taken forward is dependent on the timing of the granting of a DCO relative to the installation and commissioning phases of the Consented Scheme (see Section 2 for details on construction of Consented Scheme).

- 3.6 Work Option No.1 would occur if the EfW plant's inlet control valves had been installed at the Site under the Consented Scheme prior to the grant of the DCO.
- 3.7 Under Work Option No. 2, qualified engineers would install control valves which are not limited through mechanical stops into the EfW plant, through the following steps:
- The mechanical limitation in the inlet control valve actuators would be removed prior to the installation of the valves. This would either be done in the factory or in the workshop at the Site.
 - The inlet control valves (which are not limited through mechanical stops) would be installed in the turbine unit of the EfW plant.
 - The turbine unit would be commissioned with a generating station capacity of over 50MW.
- 3.8 Work Option No. 2 would be adopted if the limited valves had not already been installed as part of the Consented Scheme and the EfW plant turbine machinery was not yet operational.
- 3.9 Either engineering operation would be carried out within the consented IWMF building. There would be no change to the external appearance of the Consented Scheme (i.e. the height of the consented stack), as well as no changes to any landscape planting, tree retention or habitat management that forms part of the Consented Scheme.

How will the Proposed Development link to the Grid?

- 3.10 The Proposed Development would use the proposed connection being implemented to the Local Distribution Network to connect the IWMF to the existing UKPN substation at Braintree.

What will the Proposed Development look like?

- 3.11 The Proposed Development only comprises an upgrade to internal machinery associated with the IWMF. Therefore, no changes to the external massing or structure of the façade of the Consented Scheme are being proposed.

How will waste be managed in the Proposed Development?

- 3.12 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 would occur because of the Proposed Development.

How will water and drainage be managed in the Proposed Development?

- 3.13 The Proposed Development would use the same cooling tower and associated pumps as the Consented Scheme. Water demand and usage would be unchanged to the Consented

Scheme and as such, the Proposed Development would have no impact on the consented water and drainage strategy.

What landscaping will be implemented?

- 3.14 No changes are proposed to the external landscaping scheme defined for the Consented Scheme due to works associated with the Proposed Development being internal only.

Construction of the Proposed Development

- 3.15 At this stage, construction works associated with integrating the Proposed Development into the Consented Scheme are expected to be carried out in 2024 or 2025 and take approximately one to two weeks to complete.
- 3.16 The Applicant has committed to undertaking construction works in-line with standard industry good practice a means of avoiding, reducing or mitigating potential adverse effects of construction on the environment and local community.

Operational Activities

- 3.17 It is expected that the operation of the EfW plant would be a continuous process, unchanged from the Consented Scheme. It would operate twenty-four hours per day, seven days per week.

Decommissioning Activities

- 3.18 Decommissioning activities associated with the Proposed Development solely comprise the removal of the proposed engineering components (i.e. the control valves).. Decommissioning activities would be regulated through the Closure Plan prepared for the Consented Scheme (see paragraph 2.37).

4 Alternatives

- 4.1 This section provides a summary of the reasonable alternatives to the Proposed Development that were considered by the Applicant in accordance with the EIA Regulations.
- 4.2 There is a substantial body of evidence and policy in support of the national need for new low carbon energy generation facilities. The uplift in generating capacity enabled by the Proposed Development would be achieved without increasing the carbon emissions of the IWMF. The additional power generated would reduce the need for power to be generated elsewhere in the UK.

Implementation of the Consented Scheme (i.e. 'the 'Do Nothing scenario')

- 4.3 This alternative scenario would still lead to the Consented Scheme being built and becoming operational but would not maximise the potential efficiency and energy generation of the Consented Scheme that the new technology associated with the Proposed Development offers. The turbine to be installed under the Consented Scheme has the potential to deliver electricity generation greater than 49.9MW but the control valves will be physically limited to control the amount of steam which can reach the turbine so that the generation is capped at 49.9MW. Delivery of this scenario would remove the opportunity to deliver an increase in electricity generation capacity from the same fuel throughput associated with the Proposed Development.
- 4.4 Implementation of the Consented Scheme would lead to an increase of percentage contribution of low-carbon electricity generation to the national grid compared to its absence and, therefore, associated reductions in carbon emissions. However, this contribution would be less than the Proposed Development which would have a higher electricity generation from the same amount of fuel.

An electricity generation capacity for the Proposed Development less than that proposed to be assessed in the ES (i.e. less than 60MW)

- 4.5 An increase of proposed electricity generation greater than 49.9MW could be achieved by removing or reducing the limitations on the turbine.
- 4.6 The alternative scenario of seeking an increase in electricity generation of less than 60MW would not deliver the full potential gain in efficiency and associated increase in electricity generation capacity from the Consented Scheme as amended by the Proposed Development. It was not considered a reasonable alternative by the Applicant.

An electricity generation capacity for the Proposed Development greater than that proposed to be assessed in the ES (i.e. greater than 65MW)

- 4.7 To generate electricity greater than 65MW, a larger turbine and generator is likely to be required. This would require significant change to the consented building envelope, greater fuel throughput and, as a result, an increased number of HGV trips. This would have negative air quality and noise effects as well as landscape and visual impacts once operational (due to the increase in building size). It was not considered a reasonable alternative by the Applicant.

5 Consultation

What Consultation is required for a DCO?

- 5.1 The DCO process has several statutory requirements regarding consultation. These requirements stipulate that certain stakeholder groups and the community must be consulted as part of the pre-application process.
- 5.2 The DCO application is accompanied by a Consultation Report, demonstrating how the Applicant has complied with the consultation requirements of the Planning Act 2008 and supporting regulations (e.g. the EIA Regulations).

What Consultation has taken place to date?

- 5.3 Consultation has been an ongoing process that has informed the finalisation of the ES forming part of this DCO application.

EIA Scoping

- 5.4 The EIA Scoping Report and a request for an EIA Scoping Opinion (in line with Regulation 10 of the EIA Regulations) was submitted to the Planning Inspectorate on 25 April 2023 (**ES Volume 2, Appendix 5.1 EIA Scoping Report (April 2023) (Doc Ref. 6.2)**).
- 5.5 The Planning Inspectorate, on behalf of the Secretary of State, considered the EIA Scoping Report and consulted statutory consultees, the host authorities (BDC and ECC) and other relevant stakeholders on the scope and level of information proposed. A Scoping Opinion was issued by the Planning Inspectorate on 6 June 2023⁴ (**ES Volume 2, Appendix 5.2: Planning Inspectorate Scoping Opinion (June 2023) (Doc Ref. 6.2)**).
- 5.6 A summary of comments and responses is provided in **ES Volume 2, Appendix 5.3: Schedule of Scoping Opinion Comments and Responses (Doc. Ref. 6.2)**.

Non-Statutory Consultation

- 5.7 Planning consultation for the Proposed Development has been undertaken in two stages, the first being a stage of informal consultation with key stakeholders to present the emerging proposals. This included engagement with the existing representatives of the local community and other stakeholders, including host authorities (BDC and ECC). The Applicant has also met with representatives from the Environment Agency.

Statutory Consultation

- 5.8 The second stage of consultation was statutory consultation. This was undertaken between 28 June and 23 August 2023. The statutory consultation approach has been

developed through engagement with BDC and ECC. This engagement led to the production of a Statement of Community Consultation by the Applicant which set out the approach.

- 5.9 As part of the statutory consultation, the Applicant held public events at various locations in the proximity to the Proposed Development. Hard copies of the consultation material and response form were made available at those locations, along with publication of the material and response form on the Rivenhall IWMF website: <https://www.rivenhall-iwmf.co.uk>.
- 5.10 A summary of statutory consultation responses is provided in **ES Volume 1, Chapter 5: Consultation (Doc Ref. 6.1)** and **ES Volume 2, Appendix 5.4: Schedule of Statutory Consultee Comments and Responses (Doc Ref. 6.2)**.

6 Methodology

- 6.1 EIA is the process undertaken to identify and evaluate the likely significant effects of a proposed development on the environment and to identify measures to mitigate or manage any significant negative effects. The purpose of identifying significant effects is to ensure decision makers can make an informed judgement on the environmental impacts of a proposal.

How was the content of the ES scoped?

- 6.2 An EIA Scoping Report and a request for an EIA Scoping Opinion was submitted to the Planning Inspectorate on 25 April 2023. The Scoping Report was produced to document the proposed scope of the environmental assessment, including a description of the aspects and matters to be included in the ES. The Planning Inspectorate reviewed and consulted on the Scoping Report and published a Scoping Opinion on 6th June 2023.
- 6.3 As set out in Scoping Report, and agreed via the Scoping Opinion, the topics included in the ES are:
- Climate Change and Greenhouse Gases; and
 - Noise and Vibration.
- 6.4 All other topics have been scoped out of the assessment as no significant effects were anticipated.
- 6.5 The construction of the Proposed Development does not result in a material change in construction phase effects from the Consented Scheme. The Consented Scheme incorporates various environmental management controls that avoids, reduces or compensates for the environmental effects of the Consented Scheme. The **draft DCO (Doc Ref. 3.1)** provides that these controls will also apply to the Proposed Development. Therefore, a construction phase assessment was scoped out of the EIA.

Assessment Scenarios

- 6.6 The assessment scenarios considered appropriate to robustly assess the Proposed Development are as follows:
- 2025 Future Baseline Scenario – A future date when the EfW plant 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).

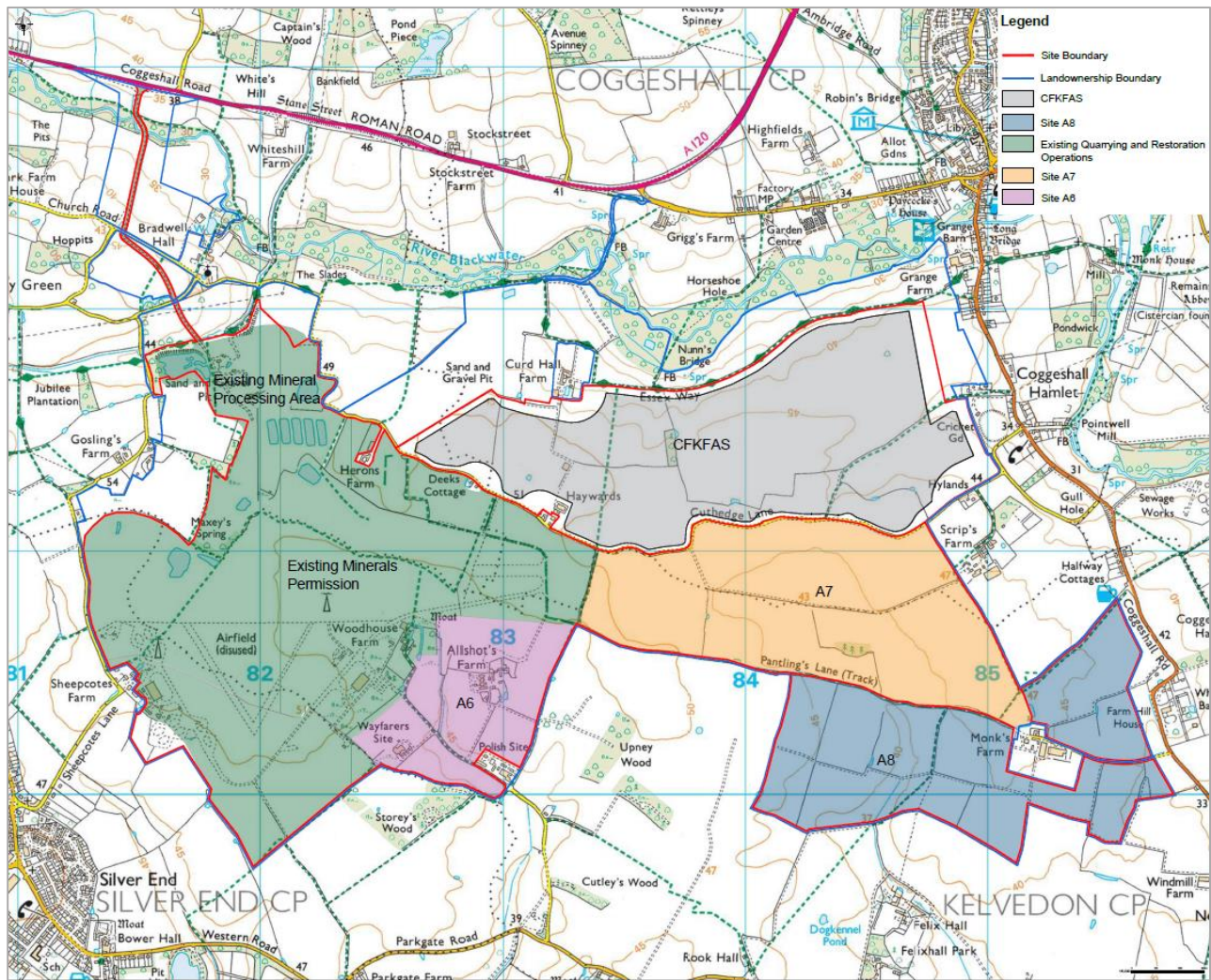
How were significant effects identified?

- 6.7 The assessments in this ES identified, described and assessed the likely significant effects of the Proposed Development on the environment during the operation of the Proposed Development.
- 6.8 To predict the potential environmental effects of the Proposed Development, it was necessary to consider the environmental conditions predicted to exist within the Site boundary and surrounding area when the EfW plant in the Consented Scheme is fully constructed and operational (i.e. what will happen in the absence of a DCO for the Proposed Development being granted). These are known as the '*Future Baseline*' conditions.
- 6.9 Effects were identified and assessed using a variety of methods, including modelling and calculations. Each assessment attached a level of 'significance' to the effects that were identified (i.e. either major, moderate, minor or negligible). Short and long-term (temporary and permanent), direct and indirect effects were assessed. The nature of an effect is expressed as being adverse (negative), negligible or beneficial (positive). The significance of effects was determined using best practice and published standards. Professional judgment was also applied by technical specialists undertaking the assessments in situations/circumstances where no legislation, definitive standards or/and industry guidance is available. Where adverse effects were likely, mitigation measures were recommended to reduce the significance of the effect and maximise potential beneficial effects. '*Residual effects*' are those that remain after mitigation measures (if any) have been implemented.

Cumulative Effects

- 6.10 The EIA Regulations require that '*cumulative*' effects be considered. The cumulative assessment is important to ensure that the combined impacts of other schemes are understood and appropriately considered in decision making. The ES considers the potential for likely significant cumulative effects on the environment resulting from the Proposed Development combined with the mineral extraction works in proximity to the Proposed Development (Figure 6.1).

Figure 6.1: Cumulative Scheme Extent and Site Referencing



7 Climate Change and Greenhouse Gases

- 7.1 International, national and local policies all promote the use of low carbon and renewable forms of power and require the impacts of all projects on greenhouse gas emissions to be assessed.
- 7.2 **ES Volume 1, Chapter 7: Climate Change and Greenhouse Gases (Doc Ref. 6.1)** provides assessment of the direct and indirect emissions from the Proposed Development, compared to the scenario with the Consented Scheme being constructed and operational.

Operational Development Effects

- 7.3 The Proposed Development would lead to an increase in power generation, which would displace power generated by other power stations across the country. This would result in a reduction in greenhouse gas emissions from other forms of power generation (which are predominantly less renewable), with no increase in direct greenhouse gas emissions from the IWMF as a result of the Proposed Development.
- 7.4 There will be no changes to scope 3 emissions⁹. The climate change assessment only considered direct and indirect emissions associated with the EfW plant (scope 2 emissions¹⁰).
- 7.5 The net benefit of the Proposed Development over a period of 25 years of operation has been estimated to be 132,082 to 238,983 tonnes of carbon dioxide equivalent (tCO_{2e}). This is a beneficial impact which is considered to be of negligible significance in the national context.

⁹ Scope 3 emissions are those caused indirectly within the wider supply chain.

¹⁰ Scope 2 emissions are those caused indirectly by consumption of imported energy.

8 Noise and Vibration

- 8.1 **ES Volume 1, Chapter 8: Noise and Vibration (Doc Ref. 6.1)** assesses the effects of operational noise associated with the Proposed Development upon the closest residential receptors surrounding the Site. The assessment ensures that the Proposed Development does not exceed the agreed noise limits for the Consented Scheme.
- 8.2 The baseline conditions at the IWMF Site without the Consented Scheme were established by a noise survey undertaken in October 2005 by Golder Associates (UK) Ltd at locations representative of the closest Noise Sensitive Receptors (NSRs) as part of the original 2008 planning application for the Site and confirmed in an updated survey in 2015 which stated baseline noise levels had remained consistent. Noise-related conditions associated with the Consented Scheme specify noise limits that cannot be breached at the closest NSRs during the daytime, evening and night-time period and these limits form the future baseline scenario for this assessment.

Operational Development Effects

- 8.3 Operational effects associated with the Proposed Development have been assessed in conjunction with an updated modelling exercise. These have been compared to the relevant daytime, evening and night-time noise limits. The assessment demonstrates that noise levels from the operational Proposed Development would be below the daytime, evening and night-time noise limits at all the identified receptors.
- 8.4 Therefore, the Proposed Development would have a negligible effect on noise.

Cumulative Effects

- 8.5 The potential for cumulative noise effects with the Proposed Development, including operations at Bradwell Quarry, has been assessed.
- 8.6 This assessment demonstrates that cumulative noise levels fall below the daytime noise limit at the closest sensitive receptors, with the exception of the residential dwelling of Haywards, approximately 950m north east from the Site boundary. However, this exceedance is caused by the consented operations at Bradwell Quarry rather than the Proposed Development.

9 Summary of Residual Environmental Effects

- 9.1 Potential effects have been assessed for the operational phase only. Construction and decommissioning effects are scoped out of this EIA.
- 9.2 The residual effects of the Proposed Development are considered to be predominantly negligible, and there would be no material change relative to the Consented Scheme.
- 9.3 The Climate Change and Greenhouse Gases assessment has identified the potential for a negligible beneficial effect on climate, due to the Proposed Development being able to generate more electrical output from the same fuel input (and generating more energy per unit greenhouse gas emitted).
- 9.4 No moderate or major effects have been identified, and no significant effects are anticipated associated with the Proposed Development.

References

¹ Her Majesty's Stationary Office (HMSO), (1990). Town and Country Planning Act 1990. United Kingdom: Central Government.

² Her Majesty's Stationary Office (HMSO), (2008). Planning Act 2008. The Stationary Office.

³ Her Majesty's Stationary Office (HMSO), 2017. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. The Stationary Office. May 2017.

⁴ Planning Inspectorate, June 2020. EIA Scoping Opinion: Proposed Rivenhall IWMF and Energy Centre. Case Ref: EN010138. 06 June 2023.

