Canford Resource Park Energy from Waste Combined Heat and Power Facility

Environmental Impact Assessment Scoping Report

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1. Introduction

1.1 MVV Environment Limited (the "Applicant") intends to submit a full planning application for a Carbon Capture Retrofit Ready (CCRR) Energy from Waste Combined Heat and Power (EfW CHP) Facility and associated infrastructure at Canford Resource Park ("CRP"), off Magna Road, in the northern part of Poole (the "Proposed Development").

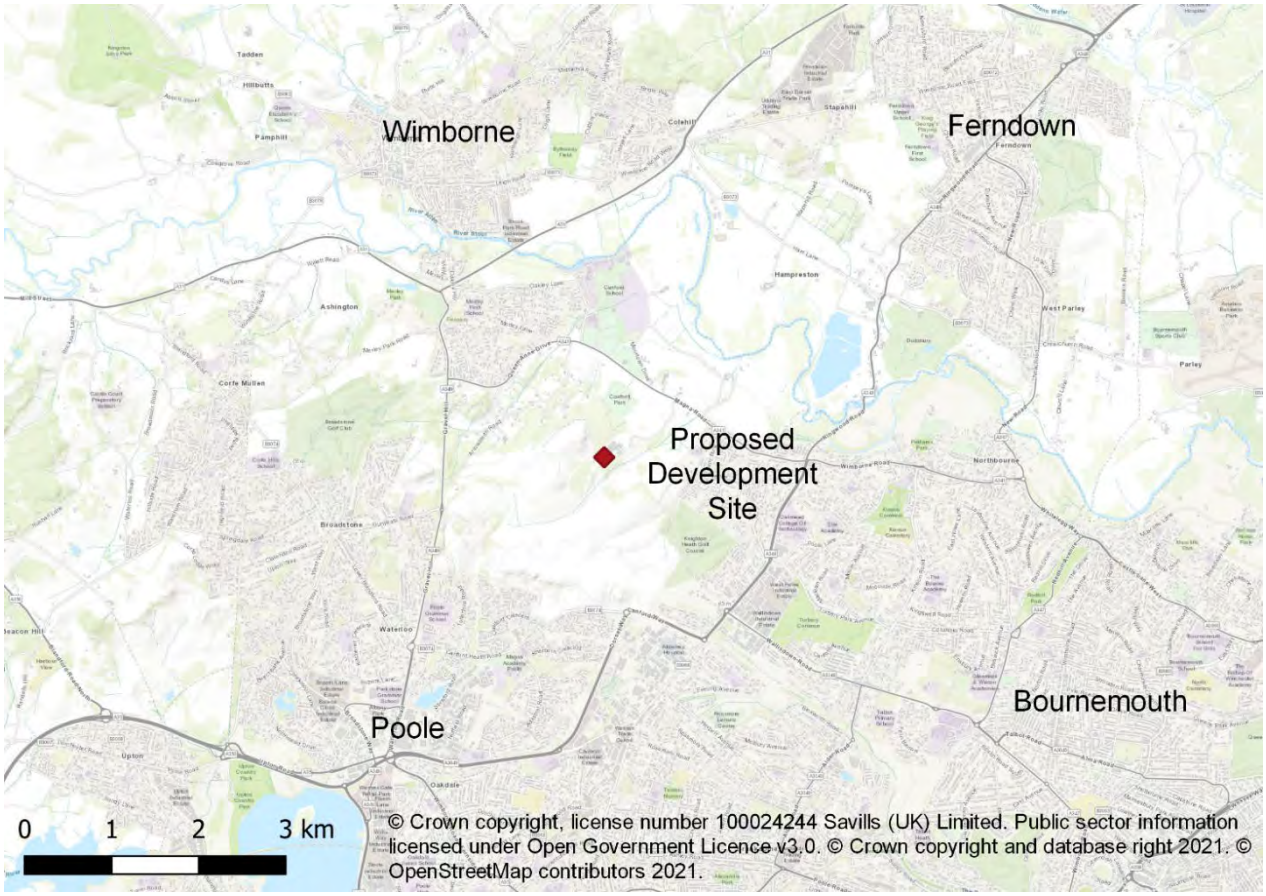
1.2 The primary purpose of the Proposed Development is to treat residual waste from Bournemouth, Christchurch, Poole and surrounding areas, that cannot be recycled, reused or composted and that would otherwise be landfilled or exported to alternative EfW facilities further afield, either in the UK or Europe.

1.3 The Proposed Development will deal with Local Authority Collected Household (LACH) residual waste and similar residual Commercial and Industrial (C&I) waste from local businesses in the surrounding area.

1.4 Electrical energy generated by the Proposed Development will be supplied to the distribution network through a connection to the nearby 132kV system. Subject to securing commercial agreement with customers, pipelines and a private wire connection to the nearby Magna Business Park form part of the Proposed Development to allow the future supply of both heat (as hot water) and electricity to its occupants. This means the proposals will be Combined Heat and Power (CHP).

1.5 Figure 1.1 shows the location of the Proposed Development

Figure 1.1: Location of the Proposed Development



1.6 The EfW CHP Facility Site can be subdivided into three broad areas:

- *EfW CHP Facility* – this refers to the main area where the EfW CHP Facility will be located. This refers to the area contained within the redline on Figure 1.2;
- *Construction Compound Area of Search* – This refers to the area of search contained in Figure 1.2. This site area will be refined and reduced, subject to further technical work, and will contain the construction compound for the duration of the construction of the Proposed Development.
- *CHP and Grid Connection Area of Search* – This refers to the area of search contained in Figure 1.2. This site area will be refined and reduced, subject to further technical work, and will be the point of connection to the DNO.

2.0 The Purpose and Structure of the Scoping Report

2.1 The Applicant will carry out an Environmental Impact Assessment ("EIA") in accordance with the requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (the “Regulations”) in order to assess the likely significant environmental effects of the Proposed Development. The Applicant will then prepare an Environmental Statement ("ES") to be submitted with the planning application for the Proposed Development to Bournemouth, Christchurch and Poole Council ("BCP Council") which is the relevant planning authority for the determination of the planning application.

2.2 Scoping is a process which enables a person minded to make an EIA application (in this case, the Applicant) to ask the relevant authority to determine the scope and level of detail to be provided in the ES by issuing a “Scoping Opinion”. Regulation 15(2) describes what such a 'scoping request' must include (see paragraph 2.3 below).

2.3 Regulation 15(2)(a) sets out the information that must be provided to the relevant planning authority to enable it to adopt a Scoping Opinion. This is set out in the following table which also identifies where in this document that information is provided.

Table 2.1: EIA Regulations requirements

Regulation 15(2)(a)	Information requirement	Where provided in this document
(i)	Plan sufficient to identify the land	Figure 1.1 and Figure 1.2
(ii)	Brief description of the nature and purpose of the development, including its location and technical capacity	Section 3
(iii)	Explanation of the likely significant effects of the development on the environment	Section 4
(iv)	Such other information or representations as the person making the request may wish to provide or make	Section 5

2.4 On receipt of this Scoping Report, the Council should consult with the key statutory bodies identified in Regulation 2(1) before issuing their formal Scoping Opinion. The Scoping Opinion will confirm the key environmental considerations to be considered.

The EIA Project Team

2.5 The table below identifies the team working on this project. These consultants, and the sub-consultants and individuals they assign to the project, constitute ‘competent experts’ for the purpose of Regulation 18(5)(a) of the EIA Regulations.

Table 2.2: The EIA project Team

Specialism	Consultant	Specialism	Consultant
EIA co-ordination	Savills	*Historic Environment*	Savills
Traffic	Paul Basham Associates	*Hydrology*	Waterman
Air Quality	Gair Consulting Ltd and Savills	*Geology, Hydrogeology and Ground Conditions*	Waterman
Noise and Vibration	South Downs Environmental Consultants and Savills	*Population and Health*	Savills
Ecology	EDP	*Carbon and Greenhouse Gases*	Savills
Landscape and Visual Impact	EDP		

3.0 Purpose of the Proposed Development

Purpose of the Proposed Development

3.1 The purposes of the Proposed Development are:

- Delivery of proximate treatment capacity for the recovery of energy from non-hazardous residual waste and Refuse Derived Fuel (RDF) using proven technology
- Creation of CHP connections supplying electricity via a private wire and heat via flow and return hot water pipes to Magna Business Park, and potentially other local users subject to agreement with customers
- Generation of part renewable, low carbon electricity and heat energy
- Delivery of baseload, part renewable, energy generation to improve energy security
- Increasing operational and transport efficiencies, and associated sustainability benefits, through co-location with existing, adjacent waste management infrastructure.

3.2 In fulfilling these purposes, it is intended that the Proposed Development will also deliver economic and environmental benefits to businesses in the vicinity of the EfW CHP Facility Site and wider area in terms of supplying energy that is low cost, part renewable-low carbon, sustainable and secure. This will have the advantage of making these businesses more robust and help to safeguard their contribution to the local economy and communities by way of jobs. It is expected that the Proposed Development would also attract investment in new developments that will add further to the local economy.

3.3 By providing a proven outlet for residual waste energy recovery, the project would assist the Council and local businesses to manage its waste in accordance with the proximity principle and waste hierarchy. The Proposed Development would be a centrally located waste management asset with excellent road access.

Distributed Generation

3.4 The Proposed Development will generate part renewable, low carbon electricity and heat energy with CHP connections supplying electricity via a private wire and heat via flow and return hot water pipes to Magna Business Park and potentially other users subject to agreement with customers. It will also supply electricity to the "local" electricity grid (i.e. the DNO system). It is a "Distributed Generation" proposal, distinct from a "Transmission Connected" scheme supplying the National Grid.

3.5 CRP is home to a wide range of businesses that could be supplied with energy directly from the Proposed Development. There is also employment development land at Magna Business Park that may be more attractive to prospective occupiers with a secure supply of part renewable, low carbon and competitively priced energy, that the Proposed Development would provide. As such the Proposed Development might assist in supporting existing businesses and employment as well as attracting new.

3.6 Distributed Generation has a number of advantages. By connecting the generation of electricity more closely to the point of its consumption it avoids electricity losses associated with transforming electricity to high voltage for long distance transmission then back to lower voltage for distribution and final consumption.

3.7 If electricity is supplied locally through private wires, bypassing the "local" grid, there will be even less electricity lost. Where heat is supplied, this will reduce dependence on gas (mainly) for water

and space heating and further reduce costs to energy consumers. When heat and electricity are supplied from the same plant, it is often referred to as a "Combined Heat and Power" (CHP) facility.

3.8 Energy from the Proposed Development will be baseload, running consistently for about 90% of the year, and will not suffer from the intermittency associated with wind and solar electricity. In addition, a backup boiler will be provided to ensure consistent heat supply during the remaining 10% of the year.

Low Carbon

3.9 Typically, residual waste fuels used in EfW CHP facilities contain approximately 50% biomass energy content, which means half of the carbon dioxide released post combustion is short cycle "biogenic" carbon; and is therefore renewable energy. Consequently, this biogenic carbon is discounted from calculations on greenhouse gas effects. In landfill, which is the only realistic alternative for the management of residual waste, biomass carbon mainly converts to methane, which has over twenty-eight times the potency of carbon dioxide as a greenhouse gas.

3.10 By virtue of their own carbon reducing commitments, as well as statutory commitments resulting from the Climate Change Act's legally binding carbon budgets, energy users are seeking opportunities to reduce the carbon content of the energy they use, to reduce their contribution to global warming. Increasingly customers, investors, lenders and regulators expect efforts to be made to reduce the carbon intensity of production and products. Enterprises may either seek to purchase energy with a renewable origin via the grid or seek direct supplies via private wires from nearby embedded baseload low carbon generators such as the Proposed Development, which will be an embedded low carbon energy source.

3.11 Access to low carbon energy generated by the Proposed Development will therefore be an advantage to local businesses and enterprises.

Secure outlet for Residual Waste

3.12 EfW CHP Facilities using proven technology provide a secure and certain means of managing residual waste left after waste reduction, re-use and recycling. The efficiency of the Proposed Development would be such that it would surpass the acknowledged standard to be considered a "Recovery" rather than a "Disposal" operation. Recovery sits between re-use and disposal (e.g. landfill) in the waste hierarchy.

3.13 The location of the Proposed Development in close proximity to the BCP urban area, where a high proportion of household and commercial waste is generated, means it is highly likely to contribute beneficially to the management of residual waste compared to other possible outlets which are further afield. The location aligns with the spatial strategy and hence Policy 6 of the Bournemouth, Christchurch, Poole and Dorset Waste Plan (2019) (the "Waste Plan"). The spatial strategy outlines the requirement for delivery of at least one recovery facility during the plan period, in a suitable location for sustainable transport and other waste transfer facilities.

3.14 In recent years the UK has become dependent on the export of residual waste to EfW facilities in Europe. In the 12 months from 1 November 2020, provisional data from Defra shows over 1.5 million tonnes of RDF was exported from England for recovery[1].

3.15 Around two thirds of household residual waste generated in BCP and Dorset is currently sent to the Mechanical Biological Treatment (MBT) facility located at the CRP. Of this, the majority, in the form of RDF, is exported for recovery in either European EfW facilities or in the UK. In 2020, most of the

[1] International Waste Shipments exported from England, Defra. https://data.gov.uk/dataset/5ffdf701-05c2-43b8-ba1e-e65580bbcc08/international-waste-shipments-exported-from-england

RDF from the Canford MBT facility was shipped to Europe for recovery. In total, of 116,000 tonnes of waste received at the MBT facility in 2020, over 106,000 tonnes (91%) were re-dispatched from the site for recovery elsewhere, with some waste landfilled. In 2020/21, across Dorset and BCP as a whole, nearly 33,000 tonnes of residual household waste was landfilled and approximately 30,000 tonnes of waste was sent to EfW facilities that did not go via initial processing at the CRP MBT facility. BCP achieved 50%, and Dorset 60%, recycling in 2020.

3.16 The Proposed Development will provide a proven and therefore reliable means of managing residual waste, utilising a resource proximate to where it is produced, rather than exporting it, and contributing to security of energy supply. This aligns with the proximity principle which is set out under Policy 1 (Sustainable Waste Management) of the Waste Plan. It also aligns with Policy 2 which supports integrated waste management where different waste facilities are at the same location.

3.17 England remains heavily dependent on landfill for the management of residual waste, notwithstanding the recent expansion of EfW capacity following the commissioning of several new plants, and the export of waste to continental Europe. In 2019, over 13 million tonnes of waste was landfilled in the UK[2]. The Proposed Development would support waste policy objectives of decreasing disposal and increasing the use of techniques such as Energy Recovery, which are above landfill in the waste hierarchy.

3.18 BCP is the Waste Authority for the area. The Spatial Strategy of the Waste Plan describes a 232,000 tonnes per annum (tpa) shortfall in residual waste management capacity by the end of the plan period. Accounting for existing flows to EfW facilities and landfill from residual waste already handled at the CRP, the Proposed Development would provide approximately 127,500 tpa of capacity for waste recovery towards this 232,000 tonnes annual requirement[3].

Alternatives

3.19 The EIA Regulations require scheme promoters to set out those alternatives that have been considered and explain the reasons for the selection of the Proposed Development over alternatives.

3.20 Alternative sites to supply energy to the intended customers of the Proposed Development are effectively limited to the site of the Proposed Development and its immediate surroundings, which is allocated in the development plan for the intensification and redevelopment of facilities including waste management (Policy 3 – of the Waste Plan). The Waste Plan has gone through a robust process to determine policy, allocations and a sustainability appraisal has been undertaken in support of this. As such it is not considered reasonable to consider alternative sites.

3.21 It is considered that there are no alternative technological solutions that could achieve all of the purposes of the project set out in paragraph 3.1. Alternative distributed energy sources are available, and these might be low carbon and provide energy security but only fuelled generation (as distinct from intermittent generation e.g. solar or wind) could achieve the same level of service (i.e. baseload supply of electricity and/ or heat) unless significant storage capacity were included, and only residual waste fuel can achieve both the generation of energy and the recovery of energy

[2] https://data.gov.uk/dataset/bb40d091-a346-4b75-aa54-df7d347bed93/2020-waste-data-interrogator
[3] UK Statistics on Waste 15 July 2021: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002246/UK_stats_on_waste_statistical_notice_July2021_accessible_FINAL.pdf
[4] Proposed EfW CHP capacity 260,000 tpa. 112,500 tpa (90% of 125,000 MBT capacity) and 20,000 tpa RDF from C&I MRF already at site. 260,000 minus (112,500 plus 20,000 equals 132,500) is 127,500 tpa
[3] Proposed EfW CHP capacity 260,000 tpa. 112,500 tpa (90% of 125,000 MBT capacity) and 20,000 tpa RDF from C&I MRF already at site. 260,000 minus (112,500 plus 20,000 equals 132,500) is 127,500 tpa

from residual waste for this purpose. The area of land required for equivalent generation by solar or wind would also be much greater.

3.22 No alternative means of securing outlets for recovery of residual waste could, on the basis of commercially proven technology, demonstrate the same level of certainty as the Proposed Development. Recycling and re-use of waste is not considered an alternative as the waste processed will only be residual waste and hence by definition is not capable of recycling or re-use. On the basis of the Applicant's knowledge of the waste industry in England and the extent to which the waste management industry is reliant on landfill and export of residual waste, the Proposed Development represents the most secure option, as well as the best on a balance of regulatory, technical, and commercial certainty, for the management of locally generated residual waste in accordance with the waste hierarchy.

4.0 Description of the Site and Proposed Development

Description of the Site Location

4.1 The Proposed Development will complement the existing waste activities of the integrated waste management park (CRP) and is centred at National Grid Reference SZ 03436 96720. The Proposed Development would be located on an area of land forming part of the existing waste management park incorporating:

- a Mechanical Biological Treatment (MBT) facility;
- a landfill gas engine generator compound;
- a Materials Recovery Facility (MRF);
- an inert waste recycling facility; and,
- an implemented, but not operational, low carbon gasification and pyrolysis energy from waste facility.

4.2 The EfW CHP Facility is to be located in the south west part of the CRP site and comprises an area of approximately 2.4 ha. This occupies the land that the low carbon gasification and pyrolysis energy from waste facility currently occupies. The EfW CHP Facility Site is enclosed on the west and south boundary by mature tree belts, a haul road servicing CRP to the north and by the existing MBT facility reception hall to the east

4.3 Access to CRP is via a 1 km dedicated hard surfaced private road (Arena Way), from a traffic light-controlled junction on the A341, Magna Road.

4.4 Approximately 500 m east of the EfW CHP Facility Site is the Bearwood residential area, beyond which is the A348 which runs north east to south west towards Poole. To the south of the EfW CHP Facility Site is the Canford Heath Nature Reserve, on the other side of which is the Canford Heath residential area and Nuffield Industrial Estate. To the west is the adjoining landfill site and inert waste processing facility, with residential areas on the periphery of Merley, which is approximately 1 km north west of the EfW CHP Facility Site.

4.5 Approximately 100 m south of the EfW CHP Facility Site is a small tributary stream which runs in a north easterly direction for around 1 km before it meets the River Stour.

4.6 Adjacent to the south of the EfW CHP Facility Site are a number of ecological designations related to the Canford Heathlands, including the Dorset Heathlands SPA, Dorset Heaths SAC and Canford Heath SSSI. In the wider area there are also a number of similar designations, such as the Corfe and Barrow Hills SSSI 2.5 km west and the Broadstone Heath LNR 1.5 km south west.

4.7 There are six public rights of way proximate to the EfW CHP Facility Site. Bridleway 118, 200 m north of the EfW CHP Facility Site, runs in an east-west orientation. Footpath 125 is approximately 500 m west of the EfW CHP Facility Site, running in a north to south orientation from the A341 to the A3049. There are also a number of bridleways to the south west of Bearwood, including bridleways 129, 24 and 26, the closest being 740 m from the EfW CHP Facility Site.

4.8 The wider area is dominated to the north and east by open space and sports pitches, to the west by the adjoining landfill site, and to the south primarily by the Canford Heath Nature Reserve. In terms of other large scale industrial and commercial sites, the Nuffield Industrial Estate is approximately 3 km south of the EfW CHP Facility Site, while there are two smaller industrial areas 2.5 km south east and east.

Description of the Proposed Development

4.9 The EfW CHP Facility will have a thermal design point of 100.5 Megawatts thermal (MWth), which gives a design throughput of 33.2 tonnes per hour (tph) assuming a Calorific Value (CV) of 10.9 Megajoules per kilogram (MJ/kg)). The CV of waste is variable, so for a lower CV the throughput can be higher and for a higher CV the throughput can be lower. With an availability of 89.4% (equal to 7,830 full load operational hours per year), at 10.9MJ/kg, this is equivalent to approximately 260,000 tonnes of residual waste and RDF per annum.

4.10 The residual waste received will be combusted and the heat recovered will be used to generate steam. The steam will drive a steam turbine and generate, in part, renewable electricity for use at the EfW CHP Facility and for export to the grid and nearby businesses. The steam turbine will be designed so that low pressure steam can be used to produce hot water to supply a district heating system at Magna Business Park and enable the future supply of heat to new and existing local businesses in the locality.

4.11 Solid residues will be left from the combustion process in the form of bottom ash, which will be transported off site, processed and reused, and residues from the air pollution control system, which will require disposal off site at a licensed hazardous waste landfill. Recycling opportunities for the APC residues are also being investigated.

4.12 The EfW CHP Facility will comprise the following principal components:

- Gate house and weighbridges;
- Tipping hall;
- Enclosed waste bunker hall;
- Turbine hall;
- Boiler house;
- Air pollution control system, including up to approximately 90m high chimney and enclosed residue collection area;
- Enclosed bottom ash collection area;
- Air cooled condenser;
- Water treatment plant;
- Central control room;
- Administration block, including meeting rooms;
- Transformer compound and switchgear building for the export of electricity from the EfW CHP Facility;
- Emergency diesel generator enclosure;
- Fire water storage tank and fire pump enclosure;
- Internal electricity cables, switchgear rooms;
- Electrical grid connection cables, private wire cables and hot water flow and return pipework to the nearby Magna Business Park; and,
- Workshop and stores building.

4.13 In addition to these principal components, the EfW CHP Facility will share the existing CRP access road along the northern boundary of the CRP, which joins the A341, Magna Road to the north east.

Waste vehicles would enter the EfW CHP Facility Site from Arena Way via the internal CRP road system, using the northern boundary roadway, which heads to the inert waste facility at Whites Pit. There is sufficient space within the EfW CHP Facility Site and the 1 km private road (Arena Way) to prevent vehicle queuing on the public highway.

4.14 After weighing in at the weighbridge, vehicles would travel along a two-way internal access road running clockwise along the south eastern boundary of the EfW CHP Facility Site to reach the tipping hall. Upon exiting the tipping hall, vehicles would travel back along the same road to weigh out at the weighbridge before exiting back onto the internal CRP site road and then onto Arena Way.

4.15 Staff vehicles and visitors would access the EfW CHP Facility Site via a separate entrance onto the internal CRP site road. There would be 31 car parking spaces provided, including two for disabled users and electric vehicle charging points to comply with local planning authority requirements. In addition, there would be 10 spaces for motorbikes and cycles.

4.16 The main building would measure between approximately 16.5m and 50m in height, 161m in length and between 42m and 63m in width. The process equipment layout is optimised to give as compact a footprint as possible.

4.17 The main building has been designed to enable the various plant items within it to be maintained and replaced as necessary throughout the life of the Proposed Development.

4.18 Waste would be delivered to the EfW CHP Facility in HGVs (Refuse Collection Vehicles (RCVs), Roll-on Roll off skips, and articulated lorries with walking floor trailers). These vehicles would enter the enclosed tipping hall, reverse up to the bunker edge and tip the waste into the tipping bunker. The tipping hall would comprise a hardstanding and five tipping bays. A mechanical crane will transfer waste from the tipping bunker to the main waste bunker.

4.19 The waste in the bunker would be mixed to maximise as far as possible the homogeneity of the waste. The combustion of the waste would take place on an inclined reciprocating grate. The primary combustion air would be supplied from under the grate through small holes in the grate bars. Combustion temperatures will remain above 850°C for at least two seconds after the last injection of combustion air in the zone above the grate.

4.20 The combustion system would be equipped with auxiliary burners fired by low sulphur light fuel oil for use in start-up/shutdown processes and for combustion support to ensure combustion is compliant with the Industrial Emissions Directive (IED) conditions. The combustion process will generate oxides of nitrogen (NOx). In order not to exceed emissions limits, set by the Environmental Permit, the secondary combustion zone would be equipped with a NOx reduction system. The process would also use a dry Air Pollution Control system using hydrated lime and activated carbon, which would be delivered in sealed bulk powder carriers which are pneumatically emptied. Acid pollutants HCl, SO_2 and HF would be removed by a dry scrubbing and filtration system, using hydrated lime as the reagent. Heavy metals, dioxins and furans would be adsorbed by activated carbon. Once the flue gas has been cleaned, emissions would be monitored using a redundant continuous emissions monitoring system (CEMS) and periodic manual sampling. The treatment process would be adjusted to ensure that the emissions meet the strict emission limits set out in the Environmental Permit. Finally, the treated flue gases would be discharged to the atmosphere, via the chimney.

4.21 The waste feed rate, the supply of primary and secondary combustion air and the grate speed would be regulated by a state of the art combustion control system which will measure steam flow rate, flue gas oxygen concentration, combustion temperature and waste depth on the grate, and control the plant combustion process to keep the rate of steam generation constant.

4.22 On average, approximately 28.15MWe of electricity will be generated by the steam turbine, of which approximately 2.55MWe will be consumed by the plant as the parasitic load, leaving 25.6MWe as the net electrical output for export to local users and the distribution network. Approximately 5MWth of usable steam (heat) energy would potentially be available to produce hot water for export via the CHP connection to users in the Magna Business Park to the south of the EfW CHP Facility site. Where contracts are entered into with users of the hot water this would be transported via the installed pipes to its destination and the return pipe would carry the cold water back to the EfW CHP Facility for reheating. The route for the CHP Connection is highlighted on Figure 1.2, some new DNO infrastructure will be required in the vicinity of the pylon connection point and an area of search for this is also shown in the figure, this is an area to the east of the towers and lines and has been informed by initial discussions with SSE. It is important to note that the ground surface above the pipe and cable trench will be restored to its pre-existing condition once installation is complete. Where trees have to be removed they will be replaced with equivalent trees in other locations.

4.23 Once operational, the EfW CHP Facility would be capable of processing residual municipal, commercial and industrial (C&I) waste 24 hours a day, up to 365 days a year.

4.24 Up to 32 full time jobs would be created as a result of the Proposed Development. These would include direct employment opportunities for the operation of the EfW CHP Facility in a mixture of skilled and unskilled roles. Further indirect employment opportunities will be created via the use of local services.

4.25 There will be one chimney, up to approximately 90 m in height and a diameter of up to 3.2 m. The chimney will be constructed of prefabricated metal sections and, to comply with the Environmental Permit, will include a platform for air emissions monitoring equipment.

4.26 Surface water runoff from the EfW CHP Facility Site would be collected and attenuated on site in underground tank(s) before passing through an interceptor and discharged at the existing CRP drainage discharge point located on the southern boundary of the EfW CHP Facility Site. Grey water recycling for the administration building shall be considered. The attenuation storage would be provided in underground tank(s). Sanitary and process wastewater would be discharged to foul sewer.

4.27 The emergency diesel generator would be located externally to the EfW CHP Facility adjacent to the northern elevation. The generator would be powered by low sulphur or HVO diesel and would be used to provide electricity for the safe shutdown of the EfW CHP Facility in the event of a loss of grid connection or failure of island mode. The external diesel tanks would be located on the southern boundary of the EfW CHP Facility Site adjacent to the perimeter road.

Construction

4.28 Should consent be granted in 2023, it is anticipated that construction of the Proposed Development will commence the same year and take approximately 36 months to complete. The Proposed Development would therefore be operational in 2026.

4.29 Proposed core construction working hours would be 07:00 to 19:00 Monday to Friday, 08:00 to 16:00 on Saturdays, and no work on Sundays or Public holidays without prior approval from BCP Council.

4.30 It should be noted that a limited number of works may be required outside of the core working hours, including:

- Continuous and over running concrete pours;

- X-ray weld testing;
- Mechanical and electrical fit-out;
- Abnormal load deliveries; and,
- Abnormal lifts.

4.31 During the 1-hour before and 1-hour after the core construction working hours, some mobilisation activities would occur and include;

- Arrival and departure of the workforce at the Site and movement to and from areas across the Proposed Development;
- Site inspections and safety checks; site meetings (briefings and quiet inspections/walkovers);
- Site clean-up (site housekeeping that does not require the use of plant); and
- Low-key maintenance including site maintenance, safety checking of plant and machinery (provided this does not require or cause hammering or banging).

4.32 Two preliminary areas of search for the temporary construction compound and laydown areas are provided in Figure 1.2. The first Area of Search is located off Arena Way to the south of the A341 and the second Area of Search is located to the south of the CHP and grid connection corridor. Both Areas of Search currently cover large areas of search, which will be refined following further work prior to the submission of the planning application. It is proposed that only one of these areas of search will be taken forward for the construction compound. The compound would be in place for the duration of the construction period, and on a reduced footprint, a further period thereafter, up to a maximum of two years, to allow for post construction warranty works. At the end of the warranty phase, the land would be vacated and restored to its original condition.

4.33 All staff and visitors would access both of the proposed locations for the temporary construction compound via Arena Way that connects to the A341, Magna Road. The construction traffic movements are considered in the traffic and transport section of this Scoping Report and will be assessed fully as part of the EIA process.

4.34 Over the duration of construction, there are likely to be around 600 construction personnel from a range of disciplines employed. During the peak periods of construction for all elements of the Proposed Development, there could be approximately 400 construction personnel present onsite at any one time.

4.35 A Construction Environmental Management Plan (CEMP) would be prepared prior to the commencement of construction. The CEMP will outline how the environmental impacts associated with the temporary construction works will be satisfactorily controlled, providing an overview of the standard construction management measures that would be implemented as part of the Proposed Development. It would also ensure that construction activities for the Proposed Development are carried out in accordance with the legislation and best practice. The key objectives of the CEMP will be to:

- provide a mechanism for delivering many of the embedded environmental measures described in the ES;
- provide a framework for monitoring and compliance auditing and inspection to ensure the environmental measures included in the scheme are being implemented;
- ensure environmental best practices are adopted throughout the construction stage;
- provide a framework for dealing with adverse effects as they occur; and,
- ensure a prompt response should unacceptable adverse effects be identified during the works.

Decommissioning

4.36 For the purpose of the assessment, a working assumption has been made that the Proposed Development has an operational lifespan of approximately 40 years. However, it should be noted that it is common for such developments to be operational for longer periods. It is anticipated that the process of decommissioning would involve the termination of operational activity, following which there would be electrical and process isolation and demolition activities. The Proposed Development site (including the CHP connection) and the grid connection would be left in a clear and secure condition in accordance with a Decommissioning Plan. The decommissioning process is anticipated to last for one year.

4.37 Unless otherwise indicated in the environmental topic sections, the environmental effects associated with the decommissioning phase would be of a similar level to those reported for the construction phase works, albeit for a lesser duration.

5.0 Approach to Assessment

The proposed EIA

5.1 EIA is a process through which the likely significant environmental effects of a development proposal can be identified and, where possible, adverse effects avoided or mitigated. This process is reported on in an ES which is submitted alongside a planning application.

5.2 The Applicant considers that the Proposed Development is EIA development requiring EIA to be undertaken. This section sets out the proposed scope and structure for the ES.

5.3 The EIA Regulations require that the ES should identify those aspects of the environment likely to be 'significantly affected' both directly and indirectly by the Proposed Development. It should then describe the nature of those significant effects taking into account the magnitude of the impact and the sensitivity of the receptor. These assessments will be individual to the specific environmental parameters and will identify mitigation where appropriate and evaluate residual effects with this in place.

5.4 The environmental effects of the Proposed Development will be considered during both the construction and operational phases, and where relevant, the decommissioning phase. The findings of the EIA will be presented in a main written statement, the ES, supported by figures and technical appendices, where required. A non-technical summary of the ES will be provided as a separate document.

Study area and temporal scope

5.5 Each assessment topic will define its study area geographically and indicate the timescales over which the environmental effects will be considered. The temporal scope will consider the construction phase, the phase when the Proposed Development is completed and operational, and where relevant during the decommissioning phase.

Technical scope

5.6 In order to determine the likely scope of the EIA, the process has identified:

- The key characteristics of the EfW CHP Facility Site and the establishment of the environmental baseline through a series of desk and field studies;
- Gaps in the baseline and further survey work required to address this;
- Initial consideration of the potential sources and nature of environmental impacts; and,
- Definition of the assessment methodologies to be used in each study area (where available).

5.7 A series of baseline studies have been undertaken to establish the baseline environment for this Scoping Report. Where necessary, studies are ongoing or are being undertaken and can be tailored to advice offered in response to this scoping request. The baseline assessment undertaken to date is outlined in the following sections.

Effects considered not significant

Waste

5.8 The Proposed Development is a waste management project, which is being progressed in order to address existing waste management and disposal issues. Waste is therefore inherent to the

Proposed Development and as such will be thoroughly assessed within each technical chapter of the ES. Consequently, a separate assessment chapter on waste is not considered to be required for the ES.

Major Accidents and Disasters

5.9 When considering the likely vulnerability of a development to major accidents or disasters there are three key criteria, derived from best practice and guidance set out in *Major Accidents and Disasters in EIA: A Primer*, published by the Institute of Environmental Management and Assessment (IEMA, September 2020) to be considered, as set out in the table below.

Table 5.1: Consideration of vulnerability of the Proposed Development to major accidents and / or disasters

Criteria	The Applicant's preliminary response
1) Is the development a source of hazard that could result in a major accident and/or disaster?	No – the boiler and steam system will be designed to comply with all relevant regulations and will have pressure release valves. The project will not process hazardous waste and the small amount generated in the air pollution control system will be contained to prevent leakage. There are numerous projects globally of a similar nature and technology to the Proposed Development which operate safely in line with the established management and control systems.
2) Does the development interact with any external sources of hazard?	There are no external sources of hazard identified that the Proposed Development will interact with, to give rise to vulnerability.
3) If an external man-made or natural hazard occurred, would the presence of the development increase the risk of significant environmental effect(s) to an environmental receptor occurring?	The Applicant has not identified any pathways by which the Proposed Development would increase the risk of significant environmental effects from external natural or man-made hazards.

5.10 The Proposed Development will be designed in line with all relevant health and safety legislation and good practice guidance to ensure safe working conditions during construction and operation. These measures will include adequate safety lighting on the chimney, safe design of the internal roads for vehicle and pedestrian movement, security measures such as CCTV, lighting and fencing, and an acoustic and visual fire and emergency alarm system.

5.11 During the operational phase, the EfW CHP Facility will employ a Quality, Health, Safety and Environment Manager (QHSE) to ensure the facility is run safely according to all health and safety legislation.

5.12 Therefore, with all proposed safety measures in place, it is not proposed for the ES to include an assessment on Major Accidents and Disasters.

Approach to the assessment

Consultations for the purposes of EIA

5.13 Further to this scoping exercise, ongoing consultation with the statutory consultees and officers of the Council will continue, where necessary, to confirm the detailed methodology for specific assessments. Each topic based EIA chapter will reference the supporting consultations that were undertaken with expert stakeholders.

Assessment methodology

5.14 Each technical chapter of the ES will include an explanation of the assessment methodology used for the specific assessment topic, adopted from relevant guidance where this is in place. Wherever possible, the methodologies will be used to predict environmental effects in a standard framework. Where there is variation from this approach, an explanation will be provided in the relevant ES chapter to provide contextual information to support the criteria used.

5.15 The EIA will identify environmental effects by estimating the predicted change that will take place as a result of the construction and operation of the project compared with the baseline scenario. Each chapter will begin by identifying potential receptors. A receptor might be a location, a group of locations, buildings, people, features or wildlife and each topic will potentially affect a different range of receptors. Each chapter will identify those receptors relevant to the topic and explain how they have been identified. Once the receptors are identified they will then be assessed to determine their sensitivity to change as a result of the project from the known baseline. The receptors will typically be assigned a sensitivity rating ranging from high to low as set out in the table below.

Table 5.2: Sensitive receptor definitions

Sensitivity	Receptor type
High	Receptors of high importance with a high susceptibility to change and limited potential for substitution or replacement.
Medium	Receptors with some sensitivity to change and of medium importance. Often have relevance at a regional scale with some opportunity for substitution or replacement.
Low	Receptors with low importance and sensitivity to change, often of relevance at a local scale.
Negligible	The receptor has a very low importance / is not sensitive to change.

5.16 The magnitude of impact affecting each receptor will then be considered. These can be positive or negative as well as temporary or permanent. The nature of each will be analysed based on quantitative and qualitative techniques and a magnitude assigned ranging from major to no change, as set out in the table below.

Table 5.3: Magnitude of effect definitions

Magnitude	Description of criteria
Negligible	Very minor changes that are not noteworthy or material.
Minor	Some measurable changes that are noteworthy and material. Minor benefit or minor loss / detrimental change to the receptor's characteristics, features or elements.

Magnitude	Description of criteria
Moderate	Adverse loss of resource or damage to characteristics, features or elements but limited impact on integrity; or Benefit or addition to characteristics, features and elements that improve the receptor.
Major	Effects will be of a consistently high magnitude and frequency and cause severe damage to key characteristics, features and elements or even a total loss; or Major improvement to characteristics, features and elements of receptor.

5.17 The environmental effect is a function of the sensitivity of receptors and the magnitude of the impact and will be dependent upon the outcomes of the assessment process. Having identified the sensitivity of the receptor and the magnitude of the impact, the standard significance matrix for the project set out in the table below, will indicate the level of effect ranging from negligible to substantial. For the purposes of the ES, unless specifically defined otherwise in an ES chapter, effects of moderate and higher are considered to be significant effects.

Table 5.4: Significance of effect matrix

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

5.18 Whilst the definition of levels of effect will be defined within each chapter of the ES the table below sets out general definitions for topics where specific EIA guidance is not available.

Table 5.5: Significance of effect definition

Effect	Definition
Substantial	A key factor on the decision making process. Generally, but not exclusively associated with features of national importance which cannot be replaced or relocated.
Major	Likely to be important considerations at a regional or district scale but, if adverse, are potential concerns, depending on the relative importance attached to the issue.
Moderate	Important at a local scale but are not likely to be key decision making issues Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource.
Minor	Effects concerning local issues that are of relevance.
Neutral	Effects which are not perceptible, or within normal bounds of variation or forecasting.

5.19 The likely effects of the Proposed Development will be described as:

- Adverse / beneficial;
- Direct / indirect;

- Temporary / permanent;
- Reversible / irreversible.

Baseline assessment

5.20 The topic-based chapters of the ES will identify the current baseline scenario, and where relevant the future scenario, against which the environmental effects of the Proposed Development will be measured. This will include consideration of cumulative developments, as described below. The baseline assessment will involve describing the current state and circumstances of the identified receptors and changes that might be expected to occur as a result of the Proposed Development and other existing and / or approved developments.

Assessment of environmental effects

5.21 The topic-based chapters will identify receptors that are likely be affected by the Proposed Development (taking into account elements of the scheme design that are inherent in the mitigation of potential effects from the Proposed Development). The assessments will then outline the potential impacts that could arise as a result of the Proposed Development in the absence of any additional mitigation. Where adverse effects are identified, the ES will set out the measures considered to mitigate any significant adverse effects of the Proposed Development, where feasible and necessary. The residual effects will be evaluated, and an assessment of their significance will be reported based upon the magnitude of impact against the sensitivity of the receptor.

Assumptions and limitations

5.22 In the preparation of the ES, it is assumed that all legislative requirements will be met, and the Proposed Development will be constructed in accordance with industry standard techniques and best practice methods implemented onsite.

Assessment of cumulative effects

5.23 The requirement for cumulative effects assessment is set out in Schedule 4 of the EIA Regulations. At Schedule 4(5), the EIA Regulations require '*A description of the likely significant effects of the development on the environment resulting from, inter alia: …(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;*

5.24 The cumulative impact comprises the combined effects of the Proposed Development with other existing and/or approved development. It is proposed that the EIA will consider proposals that have been granted planning permission but are not yet constructed or operational (PPG Reference ID 4-024-20170728), along with allocated schemes where there is a reasonable degree of certainty that they will proceed within 3 years (PPG Reference ID: 42-014-20140306).

5.25 The potential for cumulative effects needs to be considered with regard to specific environmental receptors, the characteristics of the natural environment as well as the neighbouring communities. The ES will consider which other developments have the potential for cumulative effects when the construction and operational phases could be concurrent, and where there are sensitive receptors common to both developments within a defined geographical area known as the Zone of Influence (ZOI).

5.26 As part of the scoping request, we would request that BCP Council provide a list of any developments that in accordance with the Regulations they consider should form part of the

cumulative assessment.

6.0 Likely Significant Environmental Effects

6.1 The topics in the sections below deal with the likely significant effects of the Proposed Development in construction, operation and where relevant, decommissioning.

6.2 The “baseline” against which the environmental effects of the Proposed Development will be assessed is the wider site area in its current state.

6.3 Cumulative and in-combination effects will be considered for relevant development projects which either have planning permission or seem likely to achieve it, i.e. schemes that are in clear conformity with the Development Plan and for which a planning application has been submitted. For each of the topics in the ES, a zone of influence will be defined. These zones may differ depending on the subject being assessed. Relevant development projects will be selected for consideration of cumulative and in-combination effects depending upon their characteristics in relation to the subject under assessment.

6.4 The preparation of the ES will be managed by Savills (UK) Ltd which, as well as being the UK’s largest planning consultancy, is an IEMA EIA Quality Mark qualified company. This status is audited annually by review of work undertaken by the company. The work will be undertaken by individuals holding appropriate personal qualifications and experience and will also benefit from long association of key team members with distributed energy and energy recovery projects.

6.5 The following sections conclude with all issues being considered principal matters for the EIA.

7.0 Transport

Introduction

7.1 This chapter of the ES will present an assessment of the potential effects of the Proposed Development on the transport receptors. The approach proposed in this Scoping Report has been informed by ongoing desk studies and reference to published best practice guidance and professional judgement.

Existing Baseline

7.2 No site-specific surveys have yet been undertaken with respect to existing traffic flows. However, the Department for Transport (DfT) produce road traffic statistics for roads across the country, derived from monitoring equipment and/or manual traffic counts. A (pre-pandemic) DfT manual count was undertaken in 2019 on the A341 Magna Road, approximately 700 m to the north west of the Proposed Development's site access. This data shows that in 2019, traffic flows were 1,385 in the AM peak (0800-0900) and 1,691 in the PM peak (1700-1800), while the figure for the day as a whole was 16,115.

7.3 The EfW CHP Facility Site benefits from an existing implemented planning consent for an EfW facility processing 100,000 tonnes per annum, as well as other similar adjacent uses. It is understood that this facility has not been operating at full capacity however, and traffic flows associated with the existing consent will therefore only partially be captured by the DfT data. This existing EfW facility will be demolished as part of the Proposed Development.

7.4 Therefore, given EfW CHP Facility Site's existing operational uses two scenarios have been considered when reviewing the likely impact of the Proposed Development.

- Scenario 1 allows for a net increase of movements associated with the recovery of 160,000 tpa of residual waste.
- Scenario 2 discounts this existing EfW facility consent in order to present a worst case assessment and therefore allows for a net increase of movements associated with the recovery of 260,000 tpa of residual waste.

EIA Study Area

7.5 The proposed study area is not yet known and will be confirmed through discussions with BCP Council once trip generation estimates are agreed and distribution of traffic to or from the Proposed Development is established. However, based on local knowledge of the highway network, the study area will likely comprise the A341 between Bear Cross roundabout to the east and the A349/A341 signalised junction to the west. It is also presumed at this stage that the study area will extend to include the stretch of the A349 between the junction with the A341 and the A31 to the north.

Proposed Methodology

7.6 The proposed methodology would follow the guidelines issued by the Institute of Environmental Management and Assessment (IEMA). Typically, this would require links to be assessed where traffic flows increase by 30% or any sensitive areas where flows increase by 10%. Given the traffic generated by the development will primarily consist of HGVs the associated impacts will be more significant than if the movements were predominantly via private vehicles.

7.7 The Applicant has provided initial estimates of likely vehicle movements once the EfW CHP Facility is operational. These estimate that for Scenario 2 (i.e. a net increase of movements associated

with 260,000 tpa of waste being processed) the Proposed Development would generate 257 trips per day, over a 13 hour period, of which 179 would be HGVs. More specifically, there would be 28 trips in the AM peak and 24 trips in the PM peak. Using the DfT's baseline data as a guide, the development would result in an increase of 2% and 1.4% in the AM and PM peaks, respectively. Across the day as a whole, the corresponding figure would be 1.6%.

7.8 The assumptions underpinning the estimates of operational trip generation would need to be agreed with the local highway authority, but on this basis the environmental impacts of the scheme are not likely to meet the requirements for link assessment set out by IEMA.

7.9 The numerical figures on which this conclusion is drawn do not take into account the existing implemented consent for an EfW facility processing 100,000 tpa nor the potential reduction in vehicle trips that could arise from co-location of the proposals with adjacent related waste management uses. It is therefore likely that the net impact of the proposals would in fact be lower than presented here.

Potential Effects

7.10 The potential effects can be categorised into those experienced during the operational phase, and those experienced during the construction phase (which incorporate the effects of the decommissioning phase).

Construction

7.11 For the construction phase, it is anticipated that during the peak construction period, up to 200 cars will visit the EfW CHP Facility Site per day, and a peak of circa 100 HGVs. These traffic volumes will remain the same regardless of which development scenario is assessed.

7.12 It is noted that the construction hours will take place over a 12 hour (07:00-19:00) period, therefore the majority of staff will arrive outside the peak hours on a shift by shift basis. There are not currently any definitive construction staff patterns but acknowledging that the majority of staff will not travel to/from site during the peak hours, and balancing this against the need to assess a robust scenario, it is assumed that up to one third (1/3) of staff trips are undertaken in the peak periods. This would allow for some flexibility given that not all staff will work a 12 hour 0700-1900 shift, and although this may prove high in reality, this would still give a robustness with which to undertake the assessment.

7.13 Although temporary, these vehicle trips in combination with construction HGV movements have the potential to impact upon driver delay of the local highway network. The extent of this will not be known until detailed traffic modelling is undertaken, but at the time of writing it is considered there is the potential for an adverse impact upon driver delay during the construction period. This will require further assessment.

Operation

7.14 During operation, the greatest impact is likely to be on driver delay, by virtue of increased vehicle movements on the local road network. Highway capacity modelling may be undertaken as part of the accompanying Transport Assessment, which would quantify the change in driver delay experienced at each junction that is modelled. There is also the potential to have an impact on severance of communities which abut the highway network utilised by the increased numbers of HGVs. However, on the basis of the percentage increase calculations set out above for the worst-case Scenario 2, at the present time the impact is estimated to be negligible.

7.15 The Applicants do not foresee there being significant impacts from the development on pedestrian

delay/amenity, or fear/intimidation given the minor percentage increase in traffic flows. The Transport Assessment undertaken as part of a future planning application will assess the road safety record and ensure that the access is safe and suitable for the vehicles it will serve. On this basis, the impact on accidents or safety is also anticipated to be negligible at this stage.

7.16 It is therefore suggested that the transport impacts of the scheme during the operational phase are scoped out of the EIA.

Proposed Mitigation

7.17 Given the environmental impact during the operational phase of the Proposed Development is anticipated to be negligible, no mitigation measures for environmental impacts are proposed at this stage. For EIA purposes, the percentage increase in vehicle movements associated with the worst case, Scenario 2, does not meet the IEMA requirements for assessment. However, junction capacity modelling exercises undertaken as part of the Transport Assessment may reveal the need for off-site highway works to increase junction capacity, and this exercise will need to be undertaken regardless of the status of the EIA.

7.18 In relation to the predicted impacts during the construction phase, mitigation measures that may need to be explored could include provision of a minibus or shuttle service to key destinations in the wider area, in order to reduce the number of individual cars associated with construction workers travelling to / from the EfW CHP Facility Site. As set out in paragraph 7.12, it is not considered that the construction traffic movements will take place at peak periods, however, should further modelling identify an issue, measures such as increased car sharing could be encouraged or staggered shift times.

7.19 Regarding severance caused by HGVs, the EfW CHP Facility Site is located on existing regionally significant highway networks and these roads already experience levels of traffic (including HGVs) consistent with their designation. The Proposed Development will not give rise to sufficient numbers of trips for the effect on severance to be significant and therefore proposed mitigation is considered unlikely at this stage. The only form of mitigation that would be put in place as standard would likely be route information provided to drivers to ensure any potential sensitive locations on the network are avoided.

Conclusion

7.20 Based on the currently available information, the Proposed Development will not have a significant impact upon any of the EIA criteria during the operational phase. The proposed increase in trips equates to a 1.6% daily increase in trips based on the worst-case impact as set out in Scenario 2, and therefore would not meet the thresholds for assessment set out by IEMA. During the construction phase, these thresholds are likely to be exceeded during the network peak periods, and there is likely to be a negative impact upon driver delay. It is therefore suggested that the construction phase impacts will require further assessment and possible mitigation as part of the EIA.

8.0 Air Quality

Introduction

8.1 This chapter of the ES will present an air quality assessment of the potential effects of the Proposed Development on air quality receptors. The approach proposed in this Scoping Report has been informed by ongoing desk studies and reference to published best practice guidance and professional judgement.

Existing Baseline

Sensitive Receptors

8.2 A desk study has been carried out to identify receptors that may be sensitive to the construction and operation of the Proposed Development.

8.3 The Proposed Development is located within a relatively rural environment. The nearest sensitive human receptor is located approximately 500 m to the east in the new development on the western boundary of Bearwood. There are also isolated residential properties located to the north west at Canford Magna and more densely populated areas to the north of the A341. The more urban area of Poole lies approximately 1.7 km to the south.

8.4 Within 2 km of the Proposed Development there is one Ancient Woodland (Arrowsmith Coppice) to the west. In addition, the Dorset Heaths Special Area of Conservation (SAC), Dorset Heathlands Ramsar site and Special Protection Area (SPA) and Canford Heath Site of Special Scientific Interest (SSSI) lie to the immediate south and west of the Proposed Development. There are other European sites located within 10 km of the Proposed Development including Poole Harbour Ramsar/SPA and Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC.

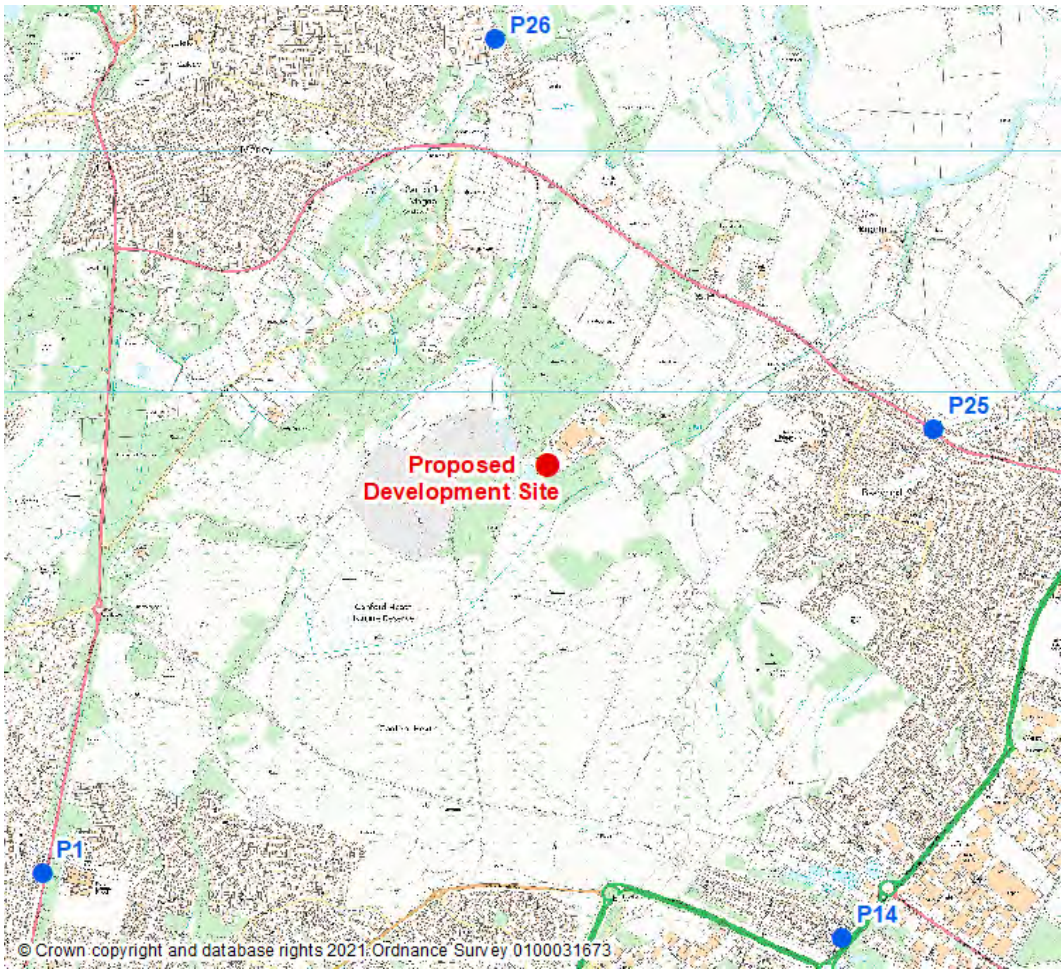
Background Air Quality

8.5 Local authorities are required to periodically review and assess the current and future quality of air in their areas. Where it is determined that an air quality objective is not likely to be met within the relevant time period, the authority must designate an Air Quality Management Area (AQMA) and produce a local action plan.

8.6 BCP Council has declared two Air Quality Management Areas (AQMAs) both for exceedance of the annual mean air quality objective for nitrogen dioxide (NO_2). These comprise Poole AQMA located at the Junction of Station Road and Commercial Road and Area No 2 Ashley Road. The nearest AQMA is in excess of 4 km from the EfW CHP Facility Site.

8.7 BCP Council carry out monitoring of NO_2, fine particles ($PM_{2.5}$) and ozone (O_3) within their administrative area. The majority of monitoring sites are located within the more urban areas of Poole and Bournemouth. Within 3 km of the EfW CHP Facility Site there are four passive diffusion tube monitoring sites for NO_2 as illustrated in Figure 8.1. Monitoring sites P1, P14 and P26 are classed as kerbside monitoring sites and P25 as a roadside site. P25 lies adjacent to the A341, P1 adjacent to the A349 and P14 adjacent to the A348 and are representative of relatively heavily trafficked roadside exposure. At these locations, measured concentrations are less than 30 $\mu g/m^3$ and well below the annual mean air quality objective of 40/$\mu g\ m^3$. P26 is located in a less urban environment to the north of the A341 in Canford Magna. Measured concentrations at this location are around 16 $\mu g/m^3$.

Figure 8.1: Location of Diffusion Tube Monitoring Sites within 4 km of the Proposed Development Site



8.8 Monitoring of fine particles (PM_{10}) is not carried out by BCP Council and monitoring of $PM_{2.5}$ is only carried out within the more urban areas of Bournemouth and Christchurch (10 km or more to the east south east of the EfW CHP Facility Site) and would not be characteristic of air quality at the EfW CHP Facility Site. Ambient background concentrations of NO_2 for 2021 have been obtained from the Defra UK Background Air Pollution Maps. These 1 km grid resolution maps are derived from a complex modelling exercise that takes into account emissions inventories and measurements of ambient air pollution from both automated and non-automated sites. For the nine grid squares surrounding the EfW CHP Facility Site, the maximum mapped 2021 background concentrations are 12.6 µg/m^3 and 8.6 µg/m^3 for PM_{10} and $PM_{2.5}$, respectively. There are well below the air quality objectives of 40 µg/m^3 and 20 µg/m^3.

8.9 Therefore, it is concluded that air quality around the EfW CHP Facility Site is relatively good and there are sufficient national and local monitoring data to characterise air quality at the EfW CHP Facility Site and its surroundings.

EIA Study Area

8.10 For air quality effects upon human health, the study area will include a grid of receptors (20 km by 20 km) centred on the EfW CHP Facility Site location and with a grid resolution of 100 m. This will enable the maximum predicted impact to be assessed. In addition, the assessment will include

sensitive human receptors within the immediate locality of the Proposed Development. The selection of these receptors will be agreed with the BCP Council's Environmental Health Department.

8.11 For habitat sites, in accordance with the Environment Agency's Risk Assessment Guidance, the impact on Local Wildlife Sites (LWS) and SSSI sites within 2 km and European sites (SAC, SPA and Ramsar sites) within 15 km will be included in the assessment.

Proposed Methodology

Potential Air Quality Impacts

8.12 Principally, the potential air quality impacts of the Proposed Development would be as follows:

- generation of dust during the construction of the Proposed Development and the potential to cause a dust annoyance, health impact or habitat impact;
- traffic-related air quality impacts during construction and operation;
- odour emissions during operation; and,
- emissions to atmosphere during operation.

Construction Impacts

8.13 Whilst the nearest housing is well separated from the Proposed Development, the EfW CHP Facility Site is adjacent to the SAC, SPA and SSSI. Following the Institute of Air Quality Management (IAQM) guidance on the assessment of dust from demolition and construction, and given the scale and nature of construction, the EfW CHP Facility Site will be treated as high sensitivity, to which the relevant highly recommended mitigation measures to control dust and mud being tracked out by vehicles will be applied. This will include the preparation of a dust management plan, hoarding along the SSSI boundary, wheel washing facilities, road sweeping, regular visual inspections, coupled with ongoing monitoring incorporating video/stills recording. The broad methodology of the guidance will be followed but it can be assumed that this will focus on the preparation of appropriate mitigation techniques and a dust management plan during construction, to minimise direct deposition and resuspension of dust during all stages of construction. Careful consideration will be given to the early installation and surfacing of demarcated site haulage routes and the temporary drainage system. The construction lay down site is less sensitive, but similar principles will be applied for consistency, without the need for boundary hoarding.

Traffic-related Air Quality Impacts During Operation

8.14 Guidance is provided by the Institute of Air Quality Management (IAQM) on indicative criteria for requiring an air quality assessment in their land-use planning development control: planning for air quality (January 2017). For sites that are not located within an air quality management area, these are 500 light duty vehicles (LDVs) AADT (annual average daily traffic) and/or 100 heavy duty vehicles (HDVs) AADT.

8.15 It is estimate that LDV movements associated with the Proposed Development would be well below those requiring a detailed assessment (less than 500 AADT). HDV movements will be generated from the delivery of waste, delivery of consumables and removal of incinerator bottom ash (IBA) and air pollution control residues (APCR). Initial estimates indicate that there would be 81 inbound HDVs for the delivery of waste (162 movements) and 13 vehicles (26 movements) for the delivery of consumables and removal of IBA and APCR. These movements are based on a five day per week (Monday to Friday) import/export schedule. Therefore, the total vehicle movements during weekdays would be 188, equivalent to 134 movements AADT. Therefore, along Arena Way the

number of HDV's would exceed the IAQM criteria for requiring a detailed assessment. However, there are no sensitive receptors located within 200 m of Arena Way and a detailed assessment would not be required. At the junction of Arena Way with the A341 (Magna Road), ingress and egress may be easterly or westerly depending on the vehicles source or destination. Therefore, the requirement for a detailed traffic-related air quality assessment will depend on the distribution of vehicles on the local road network.

8.16 Following the availability of more detailed information on traffic movements, traffic screening will be carried out. Where HDV's exceed 100 movements along any road link with sensitive receptors within 200 m then a detailed assessment will be provided.

8.17 If a detailed assessment is required, this would be undertaken using the ADMS Roads dispersion model. The assessment would consider the impact of additional traffic on concentrations of NO_2, PM_{10} and $PM_{2.5}$. It is assumed that the assessment would be confined to considering the impact on the most affected roads (e.g. the A341 east and west of the EfW CHP Facility Site entrance). The detailed assessment would also consider the cumulative impact of emissions from the EfW and traffic emissions at sensitive receptor locations.

Operational Odour Impacts

8.18 The Proposed Development is designed to treat up to 260,000 tonnes per annum of residual waste which has the potential to give rise to odours. However, the Proposed Development has been designed with embedded environmental measures to minimise the release of odours, for example.

- There will be no storage or handling of waste outside of the buildings;
- The reception hall will be maintained at a negative pressure to minimise fugitive releases from the building and air will be extracted from odorous areas and used as combustion air to destroy odours generated within the buildings.

8.19 Therefore, it is concluded that the potential for odour impacts is unlikely. Furthermore, the EfW CHP Facility will be regulated by the Environment Agency and as part of the permit process it will be necessary for the operator to provide and maintain an Odour Management Plan (OMP) prior to the operation.

Operational Chimney Emissions

8.20 The operation of the EfW CHP Facility will give rise to emissions to atmosphere. These emissions will include pollutants whose emissions will be regulated by the Environment Agency, as follows:

- oxides of nitrogen (NOx);
- sulphur dioxide (SO_2);
- carbon monoxide (CO);
- total dust (including PM_{10} and $PM_{2.5}$);
- volatile organic compounds (VOCs);
- hydrogen chloride (HCl);
- hydrogen fluoride (HF);
- trace metals (mercury, arsenic, cadmium, cobalt, chromium, copper, lead, manganese, nickel, antimony, tin, thallium and vanadium); and
- dioxins and furans (PCDD/Fs)

8.21 Other pollutants that will need to be considered include polyaromatic hydrocarbon (PAHs),

polychlorinated biphenyls (PCBs) and ammonia (NH_3).

8.22 An air quality assessment would be undertaken that would include the following:

- A review of air quality standards and guidelines of relevance to the EfW CHP Facility's proposed emissions.
- A review of the existing air quality in the area of the Proposed Development. This would include a summary of the monitoring data obtained by BCP Council, national networks and other air quality monitoring data of relevance to the development, including any site specific monitoring, where available.
- A review of the status of BCP Council's air quality review for the area and the implications of the review findings for the Proposed Development.
- Dispersion modelling of the chimney emissions from the EfW CHP Facility to assess the impact of emissions on human health and habitat sites. It is proposed that the UK Atmospheric Dispersion Modelling System (ADMS) is used for this purpose. Dispersion modelling would be undertaken for five years meteorological data from Bournemouth Airport. The averaging period for the dispersion model results would be selected to enable comparison with relevant UK air quality standards and would include hourly, daily, and annual mean concentrations.
- Comparison of predicted ground level concentrations with existing air quality and relevant air quality standards and guidelines.
- Recommendation of mitigation measures for minimising any residual air quality impacts, where required.

8.23 For human receptors, the assessment would assess risks to health from a comparison of predicted concentrations with background concentrations and relevant air quality objectives and limit values. The significance of any impact would be assessed by reference to the IAQM planning guidance (January 2017).

8.24 The impact of the Proposed Development on habitat sites would be assessed by comparison of predicted airborne concentrations (e.g. NOx, SO_2, NH_3 and HF) with relevant critical levels. In addition, for all habitat sites, including European habitat sites within 15 km and SSSIs and LWS within 2 km, a detailed assessment of impacts on habitat sites (e.g. deposition to land, acidification and eutrophication impacts) would be carried out.

8.25 The air quality assessment for the Proposed Development only considers the direct impact of exposure to airborne concentrations of pollutants from emissions to atmosphere on public health and nature conservation sites. However, indirect effects can occur following deposition of the emissions onto soil and water and uptake into plants and animals. The consideration of indirect exposure is important for emissions such as dioxins, furans, and dioxin-like PCBs as these are able to accumulate through the food chain. A human health risk assessment (HHRA) will be undertaken based on the US EPA Human Health Risk Assessment Protocol (HHRAP) using a commercially available model produced by Lakes Environmental Software.

8.26 An exposure assessment for the purposes of characterising the health impact of the Proposed Development emissions requires the following steps:

(1) Measurement or estimation of emissions from the source.

(2) Modelling the fate and transport of the emitted substances through the atmosphere and through soil, water and biota following deposition onto land. Concentrations of the emitted chemicals in the environmental media are estimated at the point of exposure, which may be through inhalation or ingestion.

(3) Calculation of the uptake of the emitted chemicals into humans coming into contact with the affected media and the subsequent distribution in the body.

8.27 With regard to Step (3), the exposure assessment will consider the uptake of dioxins, furans, and dioxin-like PCBs. Exposure levels would be compared to the World Health Organization (WHO) Tolerable Daily Intake (TDI) and to the Committee on Toxicity (CoT) TDI. The assessment would focus on the Hypothetical Maximum Exposed Individual (HMEI) and consequently represents a very worst-case approach to the assessment of human health impacts arising from emissions from the Proposed Development.

Potential Effects

Construction Phase – Dust

8.28 Dust from construction deposited on vegetation may create ecological stress within the local plant community, for example during long dry periods where dust deposited on plant foliage can adversely affect photosynthesis and other biological functions. While rainfall will remove the deposited dust from foliage this can leach chemicals into the soil, so the nature of soil/subsoil and construction materials will be assessed. Plant communities near short-term works are likely to recover within a year of the dust soiling stress ceasing and it is also likely that the depth of tree belt adjacent to the EfW CHP Facility Site will effectively filter any emissions arising. Clearly where dust deposition is adequately controlled at source and along the EfW CHP Facility Site boundary, effects further afield will also be controlled.

Construction Phase – Construction Traffic

8.29 Given the distance from the EfW CHP Facility Site to the public highway (approximately 1.2km), it should be possible to effectively control track out (typically considered to be limited to 500m from large construction sites). A wheel washing station will be installed at a suitable location and a road sweeper will be employed to keep the internal access road clean. A wheel wash will also be employed in the construction lay down area (which may be combined) and the access will also be swept to keep it clean and clear of debris.

Operational Phase – Traffic Emissions

8.30 On the availability of the traffic distribution on the local road network, a screening assessment will be carried out to determine any road links where the IAQM criteria for requiring a detailed assessment are exceeded. Where they are exceeded, a detailed traffic-related air quality assessment will be required and will consider emissions of NOx, PM_{10} and $PM_{2.5}$.

Operational Phase – Chimney Emissions

8.31 Chimney emissions from the Proposed Development have the potential to effect human health and the integrity of habitat sites. The impact of emissions on human health will be assessed by comparison of predicted exposures with air quality standards set for the protection of human health. For habitat sites, the assessment will need to consider airborne exposure to air pollutants as well as nutrient nitrogen deposition and acidification impacts.

Operational Phase – Odour

8.32 Measures for minimising odour releases are embedded in the design of the Proposed Development and are therefore considered unlikely to occur.

Proposed Mitigation

8.33 For the emissions from the EfW CHP Facility, mitigation measures are embedded in the design of

the Proposed Development and EfW plant. Furthermore, emissions from the EfW CHP Facility will be regulated by the Environment Agency via the Environmental Permitting Regulations. Therefore, it is anticipated that no further mitigation measures will be required.

Conclusion

8.34 Given the nature of the Proposed Development and the sensitivity of the surrounding environment, a detailed air quality assessment will be undertaken to determine the impact of the Proposed Development during construction and operation. The assessment would include:

- construction dust impacts – human receptors and habitat receptors;
- traffic-related air quality impacts during construction and operation unless these can be screened out based on the IAQM screening criteria;
- operational impact from chimney emissions on human receptors and habitat receptors; and,
- cumulative impact on human receptors and habitat receptors.

9.0 Noise and Vibration

Introduction

9.1 This chapter of the ES will present a noise and vibration assessment of the potential effects of the Proposed Development on sensitive receptors. The approach proposed in this Scoping Report has been informed by ongoing desk studies and reference to published best practice guidance and professional judgement.

Existing Baseline

9.2 The CRP is an established waste management park with the nearest residential development located approximately 500 m to the east north east. Low density housing, at a similar separation distance to the west on Arrowsmith Road, is separated from the CRP by the former Whites Pit landfill.

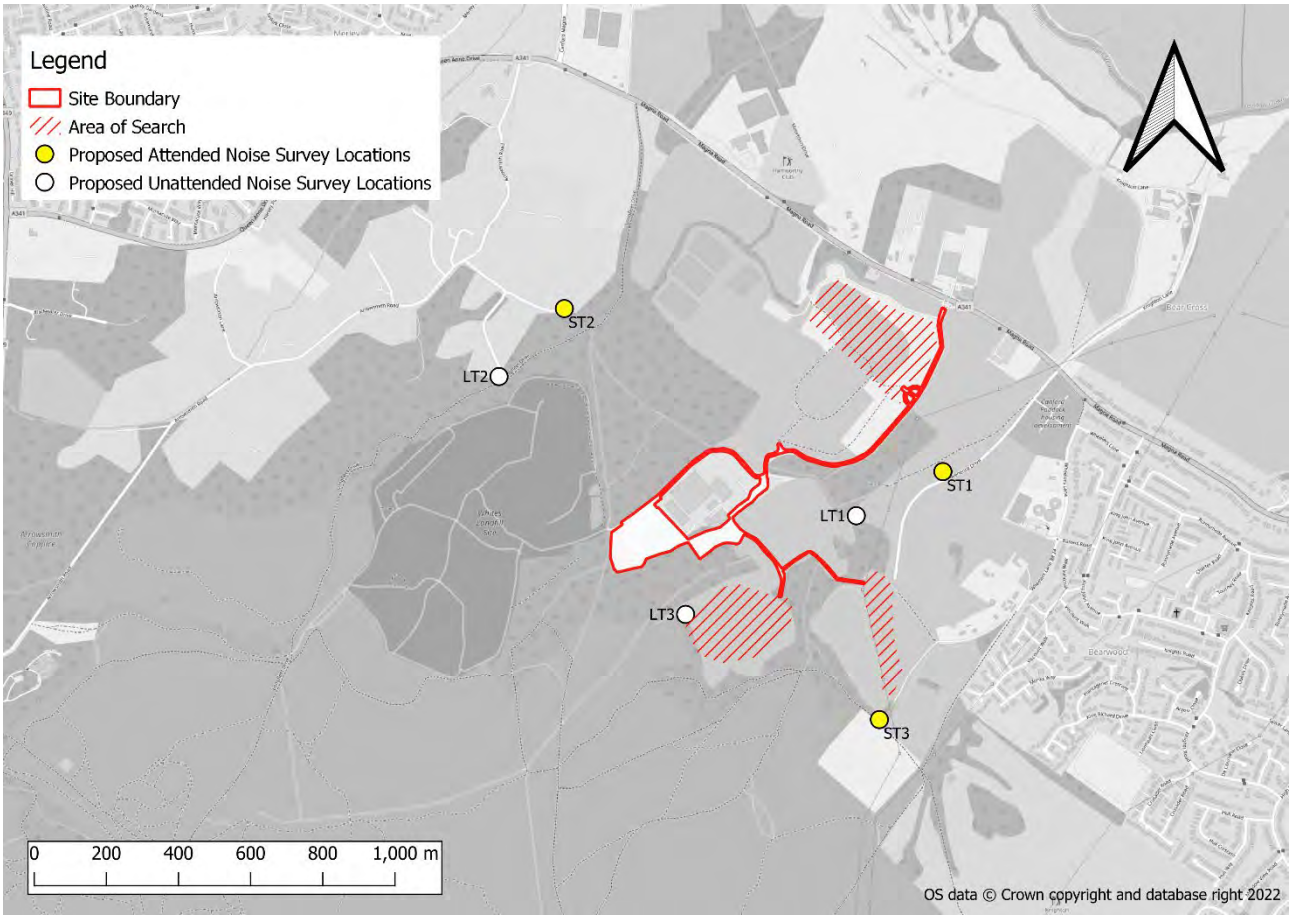
9.3 Land designated for ecological purposes including a LWS and SSSIs is located to the south and the west of the Site. Operational and/or construction noise from the Proposed Development may need to be assessed at these sites depending on their sensitivity to noise, liaison with the ecologists for the Proposed Development and consultation with relevant bodies will confirm the presence any noise sensitive species and receptors.

9.4 Previous noise survey data undertaken as part of the former planning application for the existing, smaller EfW project at the EfW CHP Facility Site would be used to inform a contemporary noise survey as part of this study. It is anticipated that ambient noise levels at the nearest residential receptors and other noise sensitive receptors in the vicinity of the Proposed Development will be influenced by noise from road traffic on the A341 and local roads, on- and off-site activities associated with the operation of the CRP and other everyday natural sources of noise in the environment.

9.5 Baseline noise and vibration measurements will be obtained to estimate and characterise existing background and ambient noise levels over a minimum period of five days inclusive of a single weekend at the nearest and potentially worst affected receptors which are representative of the residential and non-residential receptors in the vicinity of the CRP. The survey will consist of three unattended monitors installed at three locations to the north, north east and west of the CRP, with supplementary attended monitoring undertaken at up to three satellite locations around the unattended monitors.

9.6 Proposed locations for the attended (ST) and unattended (LT) noise monitoring are shown on Figure 9.1, subject to access arrangements and landowner agreements.

Figure 9.1: Proposed Continuous (LT) and Attended Monitoring (ST) Locations



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9.7 At the attended monitoring locations, satellite measurements will be obtained over three consecutive 5-minute periods to obtain representative environmental noise levels at each of the proposed monitoring locations shown on Figure 9.1. All sound level meters will be Class 1 sound level meters, will have a valid laboratory calibration certificate and will be calibrated immediately before and after the survey using a Class 1 acoustic calibrator.

9.8 The results of the survey will be analysed and presented in graphical and tabular form to provide representative baseline ambient and background noise levels, as well as maximum noise levels where relevant to inform the assessment of environmental noise impacts during both the construction and operational phases of the Proposed Development.

9.9 The acoustic characteristics of the existing noise environment in the vicinity of sensitive receptors will be assessed subjectively during the attended noise surveys to inform the assessment of site noise impacts, in accordance with the principles of British Standard BS 4142 and acoustic context.

EIA Noise Study Area

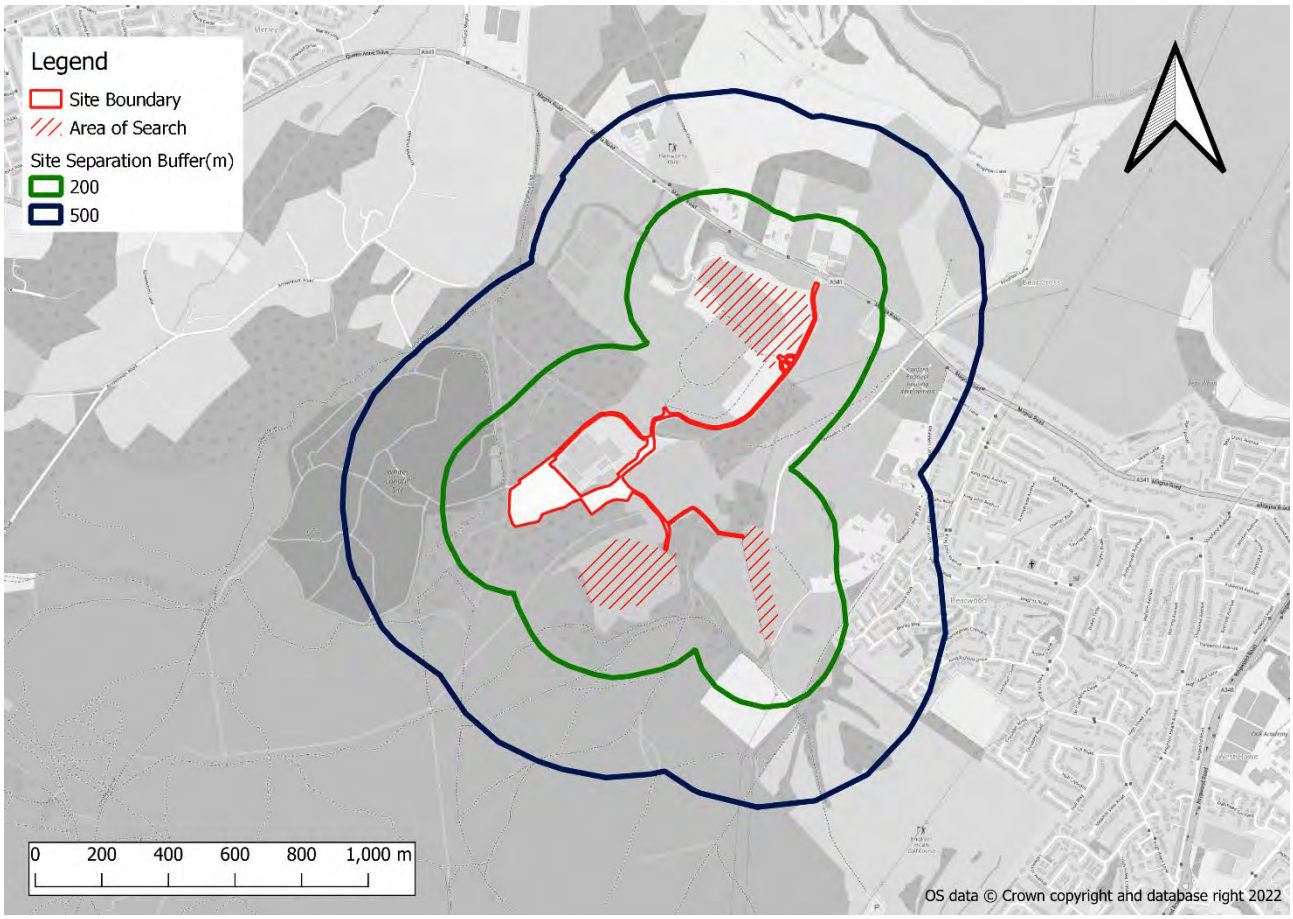
9.10 The first element of any noise assessment work concerns the characterisation of the baseline noise environment in the area and the identification of noise sensitive locations which are located in the vicinity of the Proposed Development, and which might be subject to significant effects.

9.11 The noise sensitive locations will be identified using project information on existing and planned

residential development, the use of other industrial/commercial premises and any sensitive ecological receptors to the south of the EfW CHP Facility Site as well as the SSSI land to the north. Visual inspection of these locations will be carried out as part of the mobilisation for noise surveys, set out below.

9.12 The spatial scope of the study will cover the geographical area of land that falls within 500 m separation distance from the boundary of the EfW CHP Facility Site, as shown on Figure 9.2. The study will cover additional receptor locations beyond this zone, where required, to ensure that the nearest and most sensitive receptors are protected in all directions.

Figure 9.2: Spatial scope of the study



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Proposed Methodology

9.13 The environmental noise and vibration impact assessment will cover principal sources of noise and vibration emissions from on-site plant and activities including mobile plant and the sorting and processing of materials inside and outside of building. Noise impacts associated with off-site traffic movements during the construction and operational phases of the Proposed Development will be identified separately.

9.14 Environmental noise impacts will be assessed, based on:

- a) the calculated changes in road traffic noise on the local network associated with vehicles using the EfW CHP Facility Site and the estimation of day and night-time noise levels dB LA10,18hr and dB LA10,6hr respectively, and the peak hour noise level dB LA10,1hr level on the local road network with and without the development; and

- b) the modelling of the effects of traffic and plant movement on site using recognised procedures and assessed in accordance with the EA guidance for waste management facilities using the principles set out in BS 4142:2014+A1:2019: Methods for rating and assessing industrial and commercial sound.

9.15 Assessment of the impacts of vibration generating plant that may be used during the construction phase of the Proposed Development, will be based on reference plant vibration data to estimate indicative peak particle velocity (PPV) magnitudes at the nearest vibration-sensitive receptor locations.

Calculation of Construction and Operational Noise

9.16 The calculation of noise from principal construction site activities and operational noise/vibration sources and the impacts of these on the local community requires:

- details of the location of noise sensitive receptors;
- detailed knowledge of the location and height of site noise sources (see Figure 9.2); and,
- representative reference sound power/pressure levels; and topographical information.

9.17 Proprietary software such as NoiseMap5, CadnaA and/or SoundPLAN will be used to implement the following recognised calculation procedures:

- British Standard 5228: Code of practice for noise and vibration control on construction and open sites. Part 1: Noise;
- International Organization for Standardisation. ISO 9613-1:1993: Acoustics - Attenuation of sound during propagation outdoors - Part 1: Calculation of the absorption of sound by the atmosphere;
- International Organization for Standardisation. ISO 9613-2:1993: Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation; and,
- the Calculation of Road Traffic Noise.

National Guidance

9.18 National planning policy and its implementation is set out in the National Planning Policy Framework (NPPF) which introduced an overarching framework for the consideration of noise effects associated with new development. The Noise Policy Statement for England (NPSE) built on the concepts of Significant Adverse Impacts and Other Adverse Impacts, whilst the Planning Practice Guidance on Noise (PPG-N) provides advice to local planning authorities on the need to take into account the acoustic environment and to consider: whether or not a significant adverse effect is occurring or likely to occur; whether or not an adverse effect is occurring or likely to occur; and whether or not a good standard of amenity can be achieved.

9.19 Guidance on the significance of noise effects is summarised in a Noise Exposure Hierarchy that is presented in PPG – Noise and this is re-presented below:

Table 9.1: Planning Practice Guidance – Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not Noticeable	No Effect	No Observed Effect	No specific measures required

Perception	Examples of Outcomes	Increasing Effect Level	Action
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

9.20 Where no other relevant scales exist, then the above scale will be used to identify the significance of any observed effects. Where other relevant scales have been published and are used for the identification of significant effects from specific sources of noise, then these will be used as indicated below. A unified project of significant effects will be developed that takes into account both the magnitude of impact and the sensitivity of receptor.

Rating Levels for Operational Noise

9.21 Initial estimates of specific noise impacts associated with site activities will be identified with reference to the exceedances of their rating levels above background sound levels, as set out in BS 4142. Typically, the greater the difference between rating level and background sound level, the greater the magnitude of the impact as follows: a difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context; a difference of around +5 dB is likely to be an indication of an adverse impact, depending on context; the lower the rating level is relative to the measured background sound level, the less likely it is that the specific source will have an adverse impact or a significant adverse impact; and, where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

9.22 Reference to the latest EA guidance, which provides a unified scale that seeks to reconcile the BS 4142 scale and PPG-Noise guidance, will also be made as part of the assessment.

Road Traffic Noise Changes

9.23 The Calculation of Road Traffic Noise (CRTN) document contains procedures for measuring and calculating road traffic noise levels for new and altered highways. Traffic noise levels are predicted using the LA10,18h index in dB and this will be used to identify road traffic noise impacts where it is anticipated that there will be a long-term change of 3 dB or more.

9.24 The following semantic scale for the classification of long-term road traffic noise impacts is set out in the Design Manual for Road and Bridges (DMRB) and this will be used in the assessment, subject to consideration of absolute noise levels as well as noise change:

Table 9.2: DMRB Classification of magnitudes of noise impacts

Change in noise level dB(A)	Impact Descriptor
≥ 5.0	Major
3.0 - 4.9	Moderate
1.0 - 2.9	Minor
0.1 - 0.9	Negligible
0	No change

Potential Noise and Vibration Effects

9.25 The potential effects of construction noise and vibration should not be significant due to the separation distance between the Proposed Development and the temporary nature of activity, but BCP Council will be consulted to determine whether a section 61 Application under the Control of Pollution Act 1974 is required for the construction phase.

9.26 Ultimately, the scale of any construction impacts will depend on the principal construction activities deployed, the incorporated mitigation and the execution of a comprehensive Construction Noise and Vibration Management Plan or equivalent. These will be assessed using the ABC assessment criteria detailed in BS 5228 1:2009+A1:2014 unless otherwise determined.

9.27 Given the separation distances of approximately 500 m to residential receptors, operational vibration from the EfW CHP Facility Site is not anticipated to be significant. Vibration associated with the HGV movements on the local road network are also anticipated to be minimal assuming that the EfW CHP Facility Site access roads are well maintained. As such, these potential sources of vibration will be considered at commentary level only.

9.28 If the difference between the background LA90 noise level and the Rating Level of site noise is greater than 10 dB, then effects will be considered to be significant and generic options for additional mitigation will be identified, in addition to the incorporated mitigation that is anticipated for the base case scenario. A 5 dB difference will be considered to be a potential adverse effect subject to the acoustic context of the prevailing environment.

Proposed Noise and Vibration Mitigation

9.29 Principal sources of noise associated with a project of this kind include:

- HGVs and light vehicles accessing the EfW CHP Facility Site and egressing from it on the local road network;
- HGVs and light vehicles moving around on the EfW CHP Facility Site;
- mobile plant moving and sorting material on the EfW CHP Facility Site;
- indoor fixed plant sorting and processing material on the EfW CHP Facility Site;

- outdoor fixed plant; and
- electricity generation plant.

9.30 Noise breakout from buildings will depend on internal activities and the acoustic characteristics of different building elements. Entrance and exit doors to the tipping hall and IBA loading area will remain closed outside of operational hours in normal operation.

9.31 Source noise levels for the chimney, boiler house, the turbine hall, the air-cooled condenser, the tipping hall, other indoor and outdoor plant will be provided by the Applicant, based on their previous experience of similar operations elsewhere.

9.32 Should any of the assessments result in the identification of significant effects, then additional mitigation will be identified where practicable and will be applied to source noise levels with the aim of reducing effects to below significant status.

Conclusion

9.33 Significant environmental effects will depend on the acoustic emissions of on- and off-site sources and also the ambient noise levels. It is not possible therefore to establish the significance of any noise impacts until the studies outlined in this Scoping Report have been completed, on this basis it is proposed to be scoped into the EIA.

10.0 Ecology and Nature Conservation

Introduction

10.1 This chapter of the ES will present an Ecological Impact Assessment (EcIA) of the potential effects of the Proposed Development on ecological receptors. The approach proposed in this Scoping Report has been informed by ongoing desk studies, field surveys, reference to published best practice guidance and professional judgement.

Existing Baseline

10.2 The EfW CHP Facility Site is located on an area of land currently forming part of the existing CRP, comprising predominantly bare ground/hardstanding with natural habitats limited to borders of tall ruderal/ephemeral, scattered scrub and a strip of semi-natural broadleaved woodland. The Site contains existing buildings and the road that connect the Site to the A341 to the north. There is a thin extension on the Site boundary that extends through the woodland and along existing service tracks to the east which will be used to connect the EfW CHP Facility Site to the grid and provide a CHP and private wire corridor. There are three Areas of Search that are outside the EfW CHP Facility Site boundary of which at least two will be subject to temporary impacts during construction. The Area of Search to the north of the Site comprises of species poor grassland that is used for large social events and often has vehicles parked upon it. There are two further Areas of Search to the south east of the Site that contain grassland which are yet to be surveyed. The EfW CHP Facility Site is almost entirely surrounded by semi-natural broadleaf and mixed woodland, and conifer plantation. Despite the degradation of local habitats associated with the existing waste management operations, the EfW CHP Facility Site falls within an ecologically rich landscape, as reflected by the presence of both statutory and non-statutory designations and records for a variety of protected and/or notable species.

10.3 This baseline information has been informed by a desk-based study, which included a review of existing detailed nightjar (*Caprimulgus europeaus)* studies undertaken from 2012 to 2019 and a request for ecological records from Dorset Environmental Records Centre, an Extended Phase 1 Habitat survey, a great crested newt (*Triturus cristatus*) eDNA survey, a pilot breeding bird survey and several bat activity surveys all undertaken at the EfW CHP Facility Site across 2021.

Statutory Designations

10.4 Several parcels of Dorset Heathlands Special Protection Area (SPA), Dorset Heaths Special Area of Conservation (SAC) and Dorset Heathlands Ramsar Site are located within 10 km of the EfW CHP Facility Site, the closest of which is a parcel of Dorset Heaths SAC/Dorset Heathlands SPA located immediately adjacent to the EfW CHP Facility Site's southern boundary. These designations comprise fragmented remains of once extensive dry heath, wet heath and valley mire supporting an ornithological assemblage of European importance. Qualifying species for the SPA are Dartford Warbler (*Sylvia undata*), nightjar, woodlark (*Lullula arborea*), hen harrier (*Circus cyaneus*) and merlin (*Falco columbarius*). The SAC is designated for the numerous habitats it hosts, including wet and dry heaths, alkaline fens and Molinia meadows. This EfW CHP Facility Site also represents the Dorset stronghold of the southern damselfly (*Coenagrion mercuriale*).

10.5 Poole Harbour SPA/Ramsar Site is also present within 10 km, with the closest point located approximately 4.7 km south west of the EfW CHP Facility Site.

10.6 In terms of national statutory designations, numerous Sites of Special Scientific Interest (SSSIs) are present within 5 km of the EfW CHP Facility Site, all of which are also covered by the above

SAC/SPA/Ramsar designations. The closest SSSI is Canford Heath SSSI, located immediately adjacent to the EfW CHP Facility Site's southern boundary. Several Local Nature Reserves (LNRs) are also present in the wider area, the closest of which are Millhams Mead LNR, Bourne Valley LNR and Broadstone Heath LNR, which are approximately 1.8 km east, 1.9 km south east and 2.4 km south west respectively.

Habitats

10.7 A summary, and a preliminary qualitative assessment of the habitats present within the EfW CHP Facility Site is provided in the table below.

Table 10.1: Summary of Habitats within the EfW CHP Facility Site

Habitat or Feature	Distribution within the Study Corridor	Intrinsic Ecological Importance
Built Environment and Bare Ground	Buildings, structures, bare ground/gravel and hardstanding are present throughout the EfW CHP Facility Site, access road and access tracks.	Negligible
Tall Ruderal, Ephemeral and Scattered Scrub	Along the EfW CHP Facility Site boundaries and internal access tracks.	Site
Semi-natural broadleaved woodland	Forms south western boundary of the EfW CHP Facility Site and proposed grid connection corridor to the south east.	Local
Grassland	Grassland forms the three Areas of Search.	Site and Local

10.8 As noted in the table, the majority of habitat area within the EfW CHP Facility Site is of negligible ecological value. Habitats including tall ruderal, ephemeral and scattered scrub borders, which are of up to Site level ecological value only and the woodland and grassland of Local value are also present. The habitats within the EfW CHP Facility site and Areas of Search require consideration in relation to their importance in maintaining populations of protected and/or notable species.

Species

Breeding Birds

10.9 During the pilot breeding bird survey of the EfW CHP Facility Site in early July 2021, a typical assemblage was recorded, primarily supported by the adjacent wooded habitats, with no species of particular note recorded. However, nightjar have been known to travel across the EfW CHP Facility Site and some foraging areas have been recorded nearby within similar bare ground/ruderal habitats (radio tracking data from 2015). Due consideration will need to be given to the potential for disturbance of nightjar, and other internationally important bird assemblages associated with the adjacent SAC/SPA/SSSI.

10.10 The assemblage of birds present within the EfW CHP Facility Site is unlikely to be of more than Site to Local importance, given the limited extent of the EfW CHP Facility Site, lack of natural habitats present, regular disturbance/night lighting and abundance of higher value habitats in the wider area.

Bats

10.11 A variety of bat species are known to be present in the local area, including rarer species and those with a UK range restricted to southern England/Wales. During the summer and autumn bat transect

activity surveys of the EfW CHP Facility Site undertaken in 2021, a low to moderate amount of activity by foraging common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) was recorded, mostly associated with the adjacent woodland edges, in addition to several high passes by noctule (*Nyctalus noctula*). Additionally, automated detectors, also deployed in summer and autumn 2021, picked up a small number of passes from long-eared bat (*Plecotus sp*.) and serotine (*Eptesicus serotinus*).

10.12 Habitats present within the EfW CHP Facility Site offer limited opportunities for commuting and foraging bats, and none of the structures or buildings within the EfW CHP Facility Site (or trees on the woodland edge of the EfW CHP Facility Site) offer any bat roosting suitability. The grassland within the Areas of Search is likely to provide some foraging opportunities for bats. Further bat activity surveys are scheduled to be undertaken in spring 2022 to provide complete data for the bat active season.

10.13 The assemblage of foraging and commuting bats present within the EfW CHP Facility Site is considered to be unlikely to be of more than Site to Local importance, given the lack of natural habitats present, extent of night lighting associated with current works at the recycling centre and abundance of higher value habitats in the wider area.

Badger

10.14 No evidence of this species was recorded during any of the site visits in 2021. However, the EfW CHP Facility Site provides some opportunities for foraging and sett building, and badgers are relatively common and widespread nationally and locally across Dorset (with numerous records of badger returned from within 2 km of the EfW CHP Facility Site during the desk based study). As such, it is considered likely badgers are present within the local landscape but would be of Site importance only.

Dormouse

10.15 No records for hazel dormice (*Muscardinus avellanarius*) within 2 km of the EfW CHP Facility Site were returned during the desk based study. The EfW CHP Facility Site itself has no habitat suitable for this species, however, the woodland surrounding the EfW CHP Facility Site is capable of supporting dormice. Albeit this suitability is much reduced in the woodland area immediately adjacent to the EfW CHP Facility Site due to light spill and general disturbance from the current recycling works. On a precautionary basis, any currently unknown dormouse population utilising the woodland immediately adjacent to the EfW CHP Facility Site is likely to be limited in size and considered to be of Site importance. Given the nature of the proposals and limited extent of potential impacts on suitable woodland habitat, it is considered that no further dormouse surveys are required to inform a future planning application. Measures to avoid potential impacts to this species during the works can be detailed within an Ecological Construction Method Statement (ECMS) and / or Landscape and Ecological Management Plan (LEMP) or equivalent documents, secured by a suitably worded planning condition.

Reptiles

10.16 The habitats within the EfW CHP Facility Site, albeit limited in extent, and the grassland within the south east areas of the Area of Search, provide good suitability for common reptile species. These habitats are not typically suitable for rare reptiles including sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*), however, there is limited potential for these species to utilise these habitats given their known presence within the adjacent heathland. Reptile surveys will be undertaken during 2022 to assess the population present within the Site. It is considered that if reptiles are present, it is likely to be common species only and its population is likely to be of up to Local importance, but this is subject to the findings of the surveys. Mitigation for possible harm to individuals during the construction works will be detailed within an ECMS.

Great Crested Newt

10.17 No records for great crested newt were returned from Dorset Environmental Records Centre during the desk-based study. The waterbodies within 250 m of the EfW CHP Facility Site boundary were subject to great crested newt eDNA testing in June 2021. The results were negative, suggesting this species is likely absent from the EfW CHP Facility Site and wider surroundings.

Important Ecological Features (IEFs)

10.18 Subject to further survey work, as set out in above, and the preferred route choice, IEFs that will potentially be scoped into the EcIA are set out in the table below.

Table 10.2: Summary of Important Ecological Features Pertinent to the Proposed Development

Potential Important Ecological Feature	Key Attributes	Nature Conservation Importance
Designated Sites		
Dorset Heathlands SPA/SAC/Ramsar Site	Designated for rare habitats including wet and dry heaths, alkaline fens and Molinia meadows, southern damselfly and internationally important bird assemblages.	International
Canford Heath SSSI	One of the largest heathland areas in Dorset, this site supports a number of the rare and local species characteristic of Dorset heathland	National
Habitats		
Woodland	Along south western boundary and along the grid connection to the east. The EfW CHP Facility Site is surrounded by woodland to the south east, south, west and north west.	At least Local
Grassland	Form the three Areas of Search	Up to Local
Fauna		
Breeding Birds	Typical assemblage present, Site may also be occasionally utilised by rarer species passing through the landscape, such as nightjar.	Site to Local
Bats	No roosting suitability within the EfW CHP Facility Site, but foraging/commuting by relatively common species recorded during activity surveys.	Site to Local
Reptiles	Assumed presence of common species based on local records and habitat suitability, to be confirmed through 2022 surveys.	Site to Local

10.19 Based on the information and surveys to date and habitat suitability, it is considered that great crested newts can be scoped out as IEFs requiring consideration as part of the EcIA, due to their likely absence from the EfW CHP Facility Site and wider area. It is also considered that dormice can be scoped out as an IEF due to the absence of them from the EfW CHP Facility Site itself, and the low likelihood of a population present within the woodland immediately adjacent to the EfW CHP Facility Site. Badgers can also be scoped out as an IEF due to the current absence of setts within/adjacent to the EfW CHP Facility Site.

EIA Study Area

10.20 The Extended Phase 1 survey and subsequent Phase 2 surveys will be used to identify the ecological receptors (Important Ecological Features – IEFs) present within the Zone of Influence (ZoI). For the purposes of the desk study and field work the ZoI has been considered as follows:

- international statutory designations (10 km radius around the EfW CHP Facility Site);
- national statutory designations (5 km);
- non-statutory local sites (2 km);
- Annex II bat species records (6 km);
- all other protected/notable species records (2 km);
- Extended Phase 1 Habitat Survey (Site boundary and immediately adjacent habitats);
- all protected species surveys (Site boundary and immediately adjacent habitats); and,
- Great Crested Newts (ponds within 250 m).

Proposed Methodology

10.21 A qualitative and quantitative ecological impact assessment will be undertaken, following the principles set out in the CIEEM publication 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018), and will include an assessment of cumulative effects, details of appropriate mitigation measures and details of any residual effects (should any exist following mitigation).

10.22 The potential impacts will be determined through understanding how each IEF responds to the various impacts associated with the Proposed Development. The significance of a negative effect (or a positive effect) is the product of the magnitude of the impact and the value or sensitivity of the nature conservation features affected. In order to characterise the impacts on each feature, the following parameters are taken into account:

- the magnitude of the impact;
- the spatial extent over which the impact would occur;
- the temporal duration of the impact;
- whether the impact is reversible and over what timeframe; and
- the timing and frequency of the impact.

10.23 In accordance with the CIEEM published guidance and terminology (CIEEM, 2018), a significant effect, in ecological terms, is defined as an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific, broad, or more wide-ranging, and can be considered at a range of geographical scales (International, National, Regional (South West England), County (Dorset) and Local (Poole)) including cumulative effects. Insignificant effects are those that would not result in such changes. The guidance advocates the use of professional judgement in determining significant effects over the use of matrices.

10.24 Since the purpose of an EIA is to focus on potentially significant effects, it is not reasonable to expect the assessment to include every ecological feature that may be affected, since effects are unlikely to be significant where features of low (Site level or below) value or sensitivity are, for example, subject to low or short-term impacts. The assessment will therefore focus on ecological features, based on professional judgement, experience and contextual information, of Local nature

conservation value or above.

10.25 Mitigation will be devised to avoid any significant impacts associated with the construction and operation of the Proposed Development on ecological features, in addition to decommissioning. Any other mitigation or enhancement considered appropriate would also be set out. Once the appropriate mitigation measures have been proposed, the impacts remaining once they are taken into account will be identified (the 'residual impact').

10.26 The assessment of effects will be informed by relevant best practice guidance and professional judgement. It will also give due consideration to potential in-combination or cumulative effects resulting from other development proposals within the ZoI. Consideration will also be given to the risks of major accidents and disasters and climate change.

10.27 In accordance with the Habitat Regulations 2017 (as amended), screening will be required to determine if likely significant effects upon the Dorset Heathlands SAC/SPA/Ramsar Site would arise as a result of the Proposed Development and, if this is the case, a full Appropriate Assessment (AA) will be required. While the responsibility for fulfilling the Habitat Regulations falls with the LPA, as the Statutory Body, a project specific shadow HRA Screening/AA would be completed to inform this process.

Potential Effects and Proposed Mitigation

10.28 Consideration will be given to the following potential effects:

Construction:

- land-take;
- disturbance (visual, noise);
- hydrology and pollution (dust generation, pollution of nearby aquatic habitats);
- lighting (construction); and,
- construction site hazards.

Operation:

- impacts from the changes in air quality;
- lighting (operation); and,
- disturbance from vehicle movements.

Decommissioning:

- demolition activities.

10.29 A preliminary assessment of such potentially significant effects is provided in the table below.

Table 10.3: Preliminary Assessment of Effects

Important Ecological Features	Potential Impacts	Potential Mitigation	Residual Effect
Dorset Heathlands	• Temporary and long-	• Sensitive timing of construction works to	• None

Important Ecological Features	Potential Impacts	Potential Mitigation	Residual Effect
SAC /SPA /Ramsar Site and SSSIs	term disturbance to breeding birds during construction and operation. • Degradation of habitats due to air pollutants from the operation. • Habitat Regulations Screening Assessment and likely full Appropriate Assessment required to determine potential for Likely Significant Effects upon SPA/SAC/Ramsar Site	avoid important months where disturbance impacts may arise. If required, implementation of measures to reduce disturbance such as visual screens, noise limits, sensitive lighting, and restricted working hours. • Air pollution control systems and measures and sensitive lighting during operation.	
Habitats	• Indirect and temporary loss/damage of ecologically important habitats during construction. • Degradation of habitats during operation.	• Ecological Construction Method Statement (ECMS) to be produced to include measures to be implemented on site during construction to prevent harm to existing habitats which are being retained, including measures such as protective fencing and pollution prevention. • Enhancement of existing habitats and creation of new habitats to be detailed within a Landscape and Ecological Management Plan (LEMP) including prescriptions for their long-term management and enhancement. • Biodiversity impact assessment calculations to assess the proposals overall impacts on habitats, including those not qualifying as IEFs, and inform need for habitat creation as well as opportunities to deliver net gains in biodiversity. • Sensitive drainage strategy and pollution prevention during operation. • Air pollution control systems and measures.	• None
Species	• Temporary direct and indirect harm / disturbance of protected species and loss of the habitats on which they depend during construction and decommissioning, and	• ECMS to be produced to include measures to be implemented on site during construction to prevent harm to protected species including sensitive timing of works and vegetation clearance methodologies. • Sensitive lighting strategy during operation. • Retained/newly created habitats included within the LEMP to be managed in a way so	• None

Important Ecological Features	Potential Impacts	Potential Mitigation	Residual Effect
	long-term impacts during operation.	as to benefit the wildlife interests identified including species specific enhancement features (e.g. bird and bat boxes). • Air pollution control systems and measures.	

10.30 As noted in the table above, it is considered likely that all potential impacts could be avoided or mitigated for, and as a result, no significant adverse residual effects are predicted to occur subject to the delivery of such measures.

Conclusion

10.31 It is considered that there will be a limited range of potentially significant impacts upon IEFs that could potentially arise as a result of the Proposed Development in the absence of mitigation. Terrestrial ecology and biodiversity matters should therefore be 'scoped in' to the EIA.

11.0 Landscape and Visual Impact

Introduction

11.1 Landscape and visual effects are independent but related issues. Landscape effects relate to changes to the landscape fabric and the features contained within the landscape character assessment; whereas visual effects relate to the appearance of such changes within views and the resulting effect on visual amenity.

11.2 The landscape and visual assessment will examine the current landscape and visual baseline conditions within the EfW CHP Facility Site and evaluate the EfW CHP Facility Site in its broader context with reference to sensitive visual receptors and landscape designations. The assessment process will involve an ongoing analysis of the likely landscape and visual effects of the evolving development proposals and, where 'significant' effects cannot be avoided through design, will recommend additional mitigation measures.

Existing Baseline

11.3 An initial desk based assessment conducted across 2021 has identified that there are no potentially sensitive landscape designations within the EfW CHP Facility Site, and the wider Site context is not covered by any areas of nationally or locally designated landscape importance or quality. The EfW CHP Facility Site is within the Green Belt, but this is a spatial planning tool rather than a landscape designation that might imply an elevated sensitivity.

11.4 At the national level, the EfW CHP Facility Site is located within National Character Area (NCA) '135 Dorset Heaths'. This is a large character area, covering Poole, Bournemouth and an area inland which converges with the New Forest to the east and Cranborne Chase to the north. Given the NCA covers a broad area, the key characteristics defined within it are not considered to reliably inform an assessment of the suitability of the Proposed Development in landscape terms. Of much greater use are the more localised assessments defined below.

11.5 At the district level, the EfW CHP Facility Site is located wholly within the Canford Heath Landscape Character Area (LCA), as defined within the Poole Landscape Character Assessment (Poole's 'Fringe' Landscape Character Areas). The Key Characteristics of this LCA are summarised below:

- "A distinctive elevated open heathland landscape with characteristic wooded sloped edges and a more open and exposed feel than the Corfe Hills heathland.
- An important area of bio-diversity landscape and informal recreational value.
- Much of the area is designated SSSI.
- There are important open views from the elevated areas of the heath across Poole to the Purbeck Hills.
- Hard urban edges detract from character in places.
- The northern fringes of the area merge into the heath/farm fringe character area to the north.
- Whites Pit Landfill is a key detracting feature."

11.6 The landscape within the context of the EfW CHP Facility Site includes a wide variety of land uses and characteristics. The Whites Pit Landfill is a short distance to the west, whilst to the north east lies the Canford Park Events Arena. Large areas of forestry are evident to the north and south, whilst sports pitches, a business park, a recycling centre, and other commercial developments are all evident in the local area.

11.7 Recent and established residential development is located to the north west (Merley) and south east (Bearwood), whilst the large area of Canford Heath – which is covered by a range of ecological and recreational designations, including being Open Access Land – is located to the south. In a wider sense, the EfW CHP Facility Site is located in a semi-urban, or urban fringe, location, but is overtly characteristic of industrial uses and character at the local scale.

11.8 There is extensive public access within Canford Heath, whilst a number of other definitive routes (bridleways and footpaths) run through the woodland area to the north and provide access from the nearby residential areas into the Heath. There is also a network of Public Rights of Way (PRoW) within the Stour Valley to the north east, beyond Magna Road, where a more rural character pervades due to the decreasing influence of residential and other built character.

EIA Study Area

11.9 To establish the baseline and potential limit of significant effects, a broad study enabling the geographical scope of the assessment to be defined and to provide the wider geographical context, has been undertaken. The search focused on the local planning policy context, on identifying national and local landscape and other associated designations (e.g., AONB, historic parks and gardens), and providing a general geographical understanding of the EfW CHP Facility Site and its broader context (for example, in relation to landform, transport routes and the distribution and nature of settlement).

11.10 Following initial analysis based upon knowledge of the Proposed Development, the extent of the proposed study area for landscape and visual receptors is as follows:

- For visual receptors, it is proposed that the LVIA will adopt a 10 km EIA Study Area.
- For landscape character receptors, it is proposed that the LVIA will adopt a 3 km EIA Study Area.

11.11 These Study Areas will be measured from the EfW CHP Facility Site boundary (including connection routes), and whilst all significant effects are likely to be retained within the proposed 10 km and 3 km boundaries, occasional reference may be made to features beyond this area where appropriate and necessary.

11.12 A further site visit will be undertaken following consultation with the landscape officer at BCP Council to capture the agreed photoviewpoints and record the overall Site character and condition.

Proposed Methodology

11.13 The methodology for undertaking the LVIA follows the guidelines set out in the third edition of Guidelines for Landscape and Visual Impact Assessment (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment, 2013). This will be used as a basic approach and amended as necessary to cover specific Site issues.

11.14 The first stage of the assessment is to establish the baseline conditions of the EfW CHP Facility Site and surrounding area, which will include identifying the landscape character and key features of the landscape and whether any landscape designations affect the EfW CHP Facility Site. Sources examined for the desktop study have included:

- local Planning Policy;
- landscape and historic landscape designations;
- Natural England's National Character Areas;
- district and local level Character Areas;

- Natural England's National Character Area Profile;
- Public Rights of Way (PRoW);
- local OS Maps; and,
- aerial Photographs.

11.15 Site appraisals will be undertaken during the scoping and EIA process, the purpose of which will be:

- To confirm the extent of study areas for the landscape and visual assessments, respectively;
- To confirm status of baseline conditions identified by the desktop;
- Confirm the landscape character areas within the study area and compare these to the actual baseline condition. This will also include consideration of the findings of the heritage, ecology and arboricultural assessments which present findings on features within the study area; and
- Identify the Primary Visual Envelope of the EfW CHP Facility Site and record key viewpoints from within this, which will be used to inform the landscape and visual assessment of the Proposed Development.

11.16 The second stage of the landscape and visual assessment will describe and make a judgement on:

- Effects on the Landscape Character: The effects which may arise as a result of the Proposed Development on discrete character areas and/or character types comprising features that may possess a particular quality or merit, as they sit within the EIA Study Area. In this case, the effects on the historic landscape will be considered and cross referenced with the Heritage ES Chapter, as required; and
- Visual Effects: Effects that may arise as a result of the Proposed Development on views from visual receptors, such as users of local PRoW, and upon the amenity value of the views from surrounding uses.

11.17 As part of the Proposed Development, measures to mitigate any visual impacts and enhance the landscape value and visual quality of the area are integral to architectural and landscape design work and particularly pertinent to the Proposed Development. The approach of the applicant is to produce a development of a high quality and design, taking full account of the setting of the EfW CHP Facility Site.

11.18 If any adverse visual impacts are identified through the assessment, mitigation measures will be considered such as through choice of scale, massing, materials and finishes; landscape strategy; and visual screening of construction works.

11.19 Finally, an assessment of any residual effects which may arise following the incorporation of mitigation measures will be undertaken and the significance of these effects stated. The evaluation of residual effects will be considered for Day 1 and Year 15 of the operation of the Proposed Development. This allows for the consideration of the screening effects of screen planting that will be incorporated as mitigation for the Proposed Development.

11.20 The final output of the exercise will be to provide text and illustrative material which:

- establishes the baseline conditions at a point at which the site will become available for the Proposed Development;
- assesses the landscape's sensitivity to change of nature and extent of the Proposed Development;
- assesses the landscape and visual impact of the Proposed Development (including impacts of lighting) on the EfW CHP Facility Site and relevant surrounding area;
- identifies areas of landscape and visual concern and/or benefit in relation to the construction

and operation of the Proposed Development;

- advises on any proposals to mitigate significant negative effects; and,
- identifies the residual impacts of the Proposed Development.

Proposed Representative Viewpoints

11.21 The accompanying plan Figure 11.1 provides the indicative selection of Representative Viewpoints to support the LVIA, overlaid upon a Zone of Theoretical Visibility (ZTV) diagram. A ZTV is a worst-case plan which does not take account of intervening vegetation, e.g. mature trees or buildings. These are then used as a starting point to consider theoretical visibility prior to and full visual impact assessment being undertaken, which will identify actual visibility which will result in a smaller visual envelope than that portrayed on the ZTV. This ZTV illustrates the worst-case potential visibility based upon two separate parameters; firstly, a 90m chimney, and secondly the highest part of the building being 50m tall. The two parameters are clarified in the legend. Agreement on these viewpoint locations is sought as part of the scoping process.

Consultation

11.22 Consultation will be sought with the Landscape Officer at the Competent Authority, with a particular focus on the following, as advised by GLVIA3 and general best practice:

- to agree the proposed LVIA methodology, as summarised above, including the proposed EIA Study Areas;
- to agree/finalise the selection of representative viewpoints used to inform the assessment of the Proposed Development. This will include liaising on the potential requirement for, and selection of, visualisations; and,
- to agree the correct baseline documentation (e.g., Landscape Character Assessments), as included above, and which will form the basis of the EIA appraisal.

Potential Effects

11.23 Taking account of the above, the assessment of the impact of the proposals on the landscape will evaluate the environmental consequences of the Proposed Development in terms of its effects on the character and quality of the landscape, key public views, and visual amenity.

11.24 Potential significant environmental effects (construction and operational phases) arising from the Proposed Development are anticipated to be limited to the following:

- Effects on landscape character and fabric at the Site level;
- Effects upon published landscape character areas within the defined EIA Study Area;
- Effects on PRoW and visual receptors within and in close proximity to the EfW CHP Facility Site; and
- Effects on visual amenity affecting local residents, users of PRoW, users of recreational facilities and road users within the wider Study Area through the introduction of new elements in the landscape.

11.25 The baseline analysis concludes that due to the EfW CHP Facility Site and surrounding context not lying within or adjacent to a designated landscape, and is alongside existing built form and commercial operations, that potential impacts from lighting are not considered to be significant. They will however be addressed as part of the LVIA in a detail sufficient to address the elements of the scheme on the baseline resource.

11.26 The LVIA will also include a plume visibility assessment, which will be undertaken in association with the air quality assessment.

Proposed Mitigation

11.27 The final design, has been, and will continue to be informed by consideration of a wide range of factors, including potential landscape and visual effects. The design will ensure the best possible 'landscape fit' but will also be informed by planning policy and relevant national and local guidance. The key mitigation from a landscape and visual perspective is the siting of the Proposed Development within an existing commercial type area, where large industrial developments form part of the baseline landscape and visual resource.

11.28 These locational aspects are particularly important for mitigating the main building. It is acknowledged that the Proposed Development includes a chimney, which will be difficult to mitigate visually due to its height.

Conclusion

11.29 It is considered that there will be a range of significant effects upon landscape and visual receptors likely to arise as a result of the Proposed Development. These will include landscape character effects (likely to be limited to local effects) and also significant visual effects arising from the taller elements of the scheme. Landscape and visual matters should therefore be 'scoped in' to the EIA.

12.0 Historic Environment

Introduction

12.1 This section considers two proposed sub topics of the historic environment which may be scoped in to the EIA; built heritage and archaeology.

Existing Baseline

12.2 The EfW CHP Facility Site is located south of the A341, Magna Road, adjacent to existing waste management operations. An understanding of the EfW CHP Facility Site, to date, has been derived from aerial mapping (Google Earth) and an initial desk based review of available project information. In terms of cultural heritage, the known baseline resource is derived from national datasets, including Historic England's National Heritage List for England which comprises all designated heritage assets (excluding Conservation Areas). In addition, a brief review of the Dorset Historic Environment Record (HER), through Dorset Council's Dorset Explorer website, provides a basic understanding of the known heritage assets within the EfW CHP Facility Site and wider area. This data includes previous archaeological investigations and surveys, identified landscape and built environment assets of note. The data covers both built heritage and archaeology.

12.3 There are 72 listed buildings, 19 Scheduled Monuments and five Conservation Areas within a 3 km buffer of the EfW CHP Facility Site. There are numerous records on the Dorset HER within 3 km of the EfW CHP Facility Site and these range from locations of prehistoric implements to evidence of possible medieval field systems and post-medieval gravel extraction.

12.4 It is understood that quarrying in the vicinity of the EfW CHP Facility Site has been undertaken historically, however details of this and the extent of the quarrying is unknown at the present time.

EIA Study Area

12.5 In terms of built heritage and archaeology, the ES would be accompanied by a full Heritage Statement (HS) which would comprise the initial assessment of above ground (built heritage) and buried (archaeological) heritage assets in relation to the Proposed Development, including archaeological and paleo-environmental remains, buildings, structures, monuments and landscapes of heritage interest, within both the EfW CHP Facility Site and a 1 km wider study area. The setting of statutory designated heritage assets within both the EfW CHP Facility Site and a 3 km wider study area, for example views to and from scheduled monuments and listed buildings, would also form part of the assessment. The study areas suggested are based upon best practice.

12.6 The Zone of Theoretical Visibility (ZTV), Figure 11.1, would be utilised as a starting point to understand the extent of potential impact on settings of built heritage, prior to the full heritage assessment being undertaken which will take into account intervening vegetation and buildings.

12.7 Clarification will be sought from the LPA with regard to any study area, particularly in relation to built heritage and potential impact on the setting of heritage assets in the wider area. Consultation with the County Archaeologist and Historic England, for further clarification, will be undertaken where required.

Proposed Methodology

12.8 An initial review of the EfW CHP Facility Site in its historic environment context would be undertaken through the production of a Heritage Statement which would include, but may not be limited to:

- A historic and archaeological background and historic development of the EfW CHP Facility Site and wider vicinity to understand the historic context
- the initial assessment of above ground (built heritage) and buried (archaeological) heritage assets including archaeological and paleo-environmental remains, buildings, structures, monuments and landscapes of heritage interest, within both the EfW CHP Facility Site and a 1 km wider study area. The setting of statutory designated heritage assets within both the EfW CHP Facility Site and a 3 km wider study area, for example views to and from scheduled monuments and listed buildings, would also form part of the assessment. These study areas would be refined in response to any commentary by the LPA, County Archaeologist and Historic England on suggested buffer areas
- Archival, mapping and documentary research would be undertaken as would a review of any relevant planning history for the EfW CHP Facility Site
- Dorset HER dataset will be obtained from Dorset Council's Historic Environment Team. This would include details of previous archaeological assessment, fieldwork, or survey
- Review of the ZTV mapping produced in relation to the EfW CHP Facility Site and Proposed Development
- A site walkover would be undertaken, to include both the EfW CHP Facility Site and existing CRP, and the wider study area to understand the heritage assets, their setting and relationship with the EfW CHP Facility Site. The ZTV will inform this walkover and the wider assessment of heritage assets and their sensitivity to proposals
- Scrutinising and interpreting the historic environment baseline data set out above would be undertaken to identify and understand the heritage asset which may be sensitive to the Proposed Development, and to understand the archaeological potential and significance of the EfW CHP Facility Site

12.9 Following the characterisation of the baseline environment, the methodology used to assess the likely environmental effects on potential archaeological buried heritage assets and above ground heritage assets within the EfW CHP Facility Site and wider study area would include evaluating the significance/importance of heritage assets. This is based on existing designations and professional judgment where such resources have no formal designation, and considering historical, archaeological, architectural / artistic interest as outlined in the NPPF and Historic England's Guidance.

12.10 The NPPF defines significance as 'the value of a heritage asset to this and future generations because of its heritage interest. Such interest may be archaeological, architectural, artistic or historic and it may derive not only from a heritage asset's physical presence, but also from its setting'. The determination of the significance of a heritage asset is based on statutory designation and/or professional judgement against these values.

- **Historic Interest:** the ways in which the asset can illustrate the story of past events, people and aspects of life (illustrative value, or interest). It can be said to hold communal value when associated with the identity of a community. Historical interest considers whether the asset is the first, only, or best surviving example of an innovation of consequence, whether related to design, artistry, technology or social organisation. It also considers an asset's integrity (completeness), current use / original purpose, significance in place making, associative value with a notable person, event, or movement;
- **Archaeological Interest:** the potential of the physical remains of an asset to yield evidence of past human activity that could be revealed through future archaeological investigation. This includes above ground structures and landscapes, earthworks and buried or submerged remains, palaeo-environmental deposits, and considers date, rarity, state of preservation, diversity/complexity, contribution to published priorities (research value), supporting documentation, collective value and comparative potential, and sensitivity to change; and
- **Architectural and Artistic Interest:** derive from a contemporary appreciation of an asset's

aesthetics. Architectural interest can include the design, construction, craftsmanship and decoration of buildings and structures. Artistic interest can include the use, representation or influence of historic places or buildings in artwork. It can also include the skill and emotional impact of works of art that are part of heritage assets or assets in their own right.

12.11 Definitions of heritage significance/importance are set out in the table below. This significance then translates into the 'sensitivity to change' of the receptor (heritage asset).

Table 12.1: Heritage Significance Definitions

Heritage Significance / Importance	Criteria
Very High Of International Importance	• World Heritage Sites and the individual attributes that convey their Outstanding Universal Value. • Areas associated with intangible historic activities as evidenced by the register and areas with associations with particular innovations, scientific developments, movements or individuals of global importance.
High Of National Importance	• Scheduled Monuments • Listed Buildings (Grade I, II*) • Registered Historic Parks and Gardens (Grade I, II*). • Grade II Listed Buildings which can be shown to have exceptional qualities in their fabric or historic associations • Registered Battlefields. • Non-designated sites and monuments of schedulable quality and/or importance discovered through the course of assessment, evaluation or mitigation. • Unlisted assets that can be shown to have exceptional qualities or historic association, and may be worthy of listing at Grade II* or above. • Designated and undesignated historic landscapes of outstanding interest, or high quality and importance and of demonstrable national value. • Well-preserved historic landscapes, exhibiting considerable coherence, time-depth or other critical factors.
Medium Of Regional Importance	• Conservation Areas • Grade II Listed Buildings • Grade II Registered Historic Parks and Gardens • Historic townscapes and landscapes with reasonable coherence, time-depth and other critical factor(s). • Unlisted assets that can be shown to have exceptional qualities or historic association, and may be worthy of Grade II listing. • Designated special historic landscapes. • Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value. • Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factors. • Archaeological features and deposits of regional importance.
Low	• Locally Listed Buildings

Heritage Significance / Importance	Criteria
Of Local Importance	• Sites of Importance within a district level. • Heritage Assets with importance to local interest groups or that contributes to local research objectives • Robust undesignated assets compromised by poor preservation and/or poor contextual associations. • Robust undesignated historic landscapes. • Historic landscapes with importance to local interest groups. • Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations.
Negligible	• Assets with little or no archaeological, architectural, or historical interest

12.12 An advice note published in 2017 by Historic England provides guidance on managing change within the settings of heritage assets. It gives advice on understanding setting in relation to importance (or sensitivity to change in regards to any proposed ES chapter), and how views may contribute to setting. The advice note sets out a recommended approach (reformulated here in context of the EIA), including:

- Setting is the surroundings in which an asset is experienced and may therefore be more than its curtilage; that it may be affected by a range of factors beyond visual, including historical relationships between assets; it may extend beyond public rights of way;
- The extent of setting is not fixed and may change as the asset and its surroundings evolve; heritage assets within extensive landscapes may have nested or overlapping settings;
- Where the setting of a heritage asset has been compromised, consideration needs to be given to whether additional change will further detract from, or can enhance the importance of the asset;
- Importance of setting in relation to designed landscapes can extend beyond the designated area and may not necessarily be confined to land visible from the EfW CHP Facility Site, but may have historic or other associations with the asset; and
- The contribution of views to setting can be assessed in relation to static, dynamic, long, short or laterally spreading views, and include a variety of views of, from, across or including that asset.

12.13 Evaluating the contribution that setting makes to the overall significance (or 'sensitivity to change') of above ground heritage assets selected for assessment. Evaluation of importance would be informed primarily by the designation of the assets at an international, national, regional or local level (such as listing) as well as their ability to contribute to an understanding of the past.

12.14 In the context of the EIA, the heritage asset (either above or below ground) is the receptor of change and the term 'significance' is interchangeable with the term 'importance' and the 'sensitivity to change' of the receptor. It is proposed that the ES Chapter would utilise the term 'importance' in relation to the significance of the heritage asset (receptor) in question, while 'significance', will be associated with the 'significance of the environmental effect' evaluating the contribution of setting.

Potential Effects

12.15 Based on current knowledge, it is likely that the Proposed Development would involve below ground works which would have a major effect on any extant archaeology within the EfW CHP Facility Site, notably in the area of the main construction site. The EfW CHP Facility Site is

currently partially developed, and it is known that the area around it has also been subject to gravel extraction; as such any below ground archaeology at the EfW CHP Facility Site is likely to have been compromised historically. Effects on built heritage would relate to visual changes and the effect of the scale of the Proposed Development on views, potentially to and from, heritage assets. Based on current understanding, the most sensitive built heritage would be the listed buildings located at Canford School, circa 2 km north of the EfW CHP Facility Site, however there are a number of scheduled monuments in the study area and, dependent on further assessment, there is potential for impacts on their significance. These potential impacts (Magnitude of Change) are set out below.

Table 12.2: Heritage Magnitude of Change

Magnitude of change	Description of change
Large	• Complete removal of asset; • Change to asset importance resulting in a fundamental change in our ability to understand and appreciate the resource and its historical context, character and setting; • The transformation of an asset's setting in a way that fundamentally compromises its ability to be understood or appreciated; and • The scale of change would be such that it could result in a designated asset being undesignated or having its level of designation lowered.
Medium	• Change to asset importance resulting in an appreciable change in our ability to understand and appreciate the asset and its historical context, Character and setting; and • Notable alterations to the setting of an asset that affect our appreciation of it and its importance; or the unrecorded loss of archaeological interest.
Small	• Change to asset importance resulting in a small change in our ability to understand and appreciate the asset and its historical context, character and setting.
Negligible	• Negligible change or no material change to asset importance. No real change in our ability to understand and appreciate the asset and its historical context, character and setting.
Uncertain	• Level of survival / condition of resource in specific locations is not known: magnitude of change is therefore not known.
No Change	• No Change

Proposed Mitigation

12.16 In terms of archaeology, it is probable that the Proposed Development would result in the loss of any extant archaeological remains within the EfW CHP Facility Site (specifically the area of the proposed facility), bearing in mind that the previous use of the EfW CHP Facility Site will have impacted any extant archaeology. This could be mitigated by a programme of archaeological works. A Heritage Statement, (including a Built Heritage Statement and an Archaeological Desk-Based Assessment) would enhance the understanding of the potential of the EfW CHP Facility Site for archaeology remains and would be used to inform any future archaeological mitigation works. Once additional assessment is undertaken, and in consultation with the County Archaeologist, an agreed programme of archaeological works would be progressed, if required. Any works would be

undertaken in accordance with a Written Scheme of Investigation (WSI) agreed with the County Archaeologist.

12.17 In terms of built heritage, it would be difficult to fully mitigate any visual impact of the Proposed Development, notably the taller elements, on the setting of the heritage assets which may be sensitive to development.

12.18 Following identification of any mitigation strategies which can be applied to the Proposed Development, the significance of effect can be established.

Conclusion

12.19 The significance of the resultant environmental effect of the Proposed Development is determined by combining the assigned sensitivity to change of the receptor (dictated by the importance of the heritage asset) with the predicted magnitude of change (impact) on that receptor:

Sensitivity to change (of the receptor) + magnitude of change (impact) = significance of effect

12.20 The table below illustrates how information on the sensitivity to change of the asset and the magnitude of change arising from the Proposed Development has been combined to arrive at an assessment of the significance of effect. The matrix is not intended to 'mechanise' judgment of the significance of effect, but to act as a check to ensure that judgements regarding heritage importance and the assets sensitivity to change and magnitude of change arrive at a level of significance of the effect that is reasonable and balanced.

12.21 Where information is insufficient to be able to quantify either the receptor's sensitivity to change or the magnitude of change arising from the Proposed Development with any degree of certainty, the effect is given as 'uncertain'.

12.22 In terms of the ES Chapter, only the Major and Moderate effects would be considered 'significant' and these are shaded in grey.

Table 12.3: Heritage Significance Criteria

	Sensitivity to change of the receptor (depending on its heritage significance)					
Magnitude of change		Very High	High	Medium	Low	Negligible
	Large	Major	Major	Major or Moderate	Moderate or Minor	Minor or Negligible
	Medium	Major or Moderate	Major or Moderate	Major or Moderate	Minor	Minor or Negligible
	Small	Moderate or Minor	Moderate or Minor	Minor	Minor	Negligible
	Negligible	Minor or Negligible	Minor or Negligible	Negligible	Negligible	Negligible

12.23 Once the significance of the effect has been established, the next step would be to assess the nature (or direction) of the effect, which can be 'beneficial', 'adverse' or 'neutral'. If the Proposed Development would enhance heritage values or the ability to appreciate them, as expressed in the first stage of the assessment, then the impact on heritage importance would be deemed to be positive, therefore the nature of the effect is attributed as 'beneficial'. However, if the Proposed Development would fail to preserve heritage values or impairs their appreciation by affecting the receptor's heritage importance negatively, then the nature of the effect would be deemed to be 'adverse'. In cases where the importance of the effect is considered to be very minor, negligible or

uncertain, then it is generally impossible to identify the nature of the effect. In these cases, the nature of the effect is attributed as 'neutral'.

12.24 The following terms have been used to define the significance of effects identified:

- Major effect: where the Proposed Development could be expected to have a considerable effect (either adverse or beneficial) on heritage receptors (assets). For the historic environment, if the effect is adverse in nature, this equates to 'substantial harm' to, or total loss of, importance (or significance in terms of the NPPF) of an asset of very high, high or medium heritage importance, as a result of changes to its physical form or setting.
- Moderate effect: where the Proposed Development could be expected to have a noticeable effect (either adverse or beneficial) on heritage assets (receptors). For the historic environment, if the effect is adverse in nature, this equates to 'less than substantial harm' (in NPPF terms) to the importance (or significance) of an asset of very high, high or medium heritage importance, as a result of changes to its physical form or setting.
- Minor effect: where the Proposed Development could be expected to result in a small, barely noticeable effect (either adverse or beneficial) on heritage assets (receptors). For the historic environment, if the effect is adverse in nature, this equates to a low degree of 'less than substantial harm' (in NPPF terms) to the importance of an asset of very high, high or medium heritage importance, as a result of changes to its physical form or setting, or 'substantial harm' to, or the loss of, importance of an asset of low heritage importance.
- Negligible: where very minor or no discernible effect is expected as a result of the Proposed Development on heritage receptors (assets), i.e. the effect is insignificant. In this case the nature of the effect is identified as neutral.

12.25 Based upon the current known historic development of the EfW CHP Facility Site and the known heritage assets and following a high level review of the methodology set out above, it is considered that both built heritage and archaeology would be scoped into the EIA. The effects of the Proposed Development would result in significant environment effects in terms of the impact on any archaeology within the EfW CHP Facility Site, and have the potential to result in significant environmental effects on the built heritage within the study area due to impacts on setting.

13.0 Hydrology

Introduction

13.1 This chapter of the ES will present an assessment of the potential effects of the Proposed Development on hydrological receptors. The approach proposed in this Scoping Report has been informed by ongoing desk studies and reference to published best practice guidance and professional judgement.

Existing Baseline

13.2 Baseline data relating to the EfW CHP Facility Site and its surroundings have been compiled using the following sources:

- Review of online Environment Agency (EA) online mapping;
- Review of BCP Council and Dorset Council Strategic Flood Risk Assessment (SFRA) and Surface Water Management Plan (SWMP) and associated mapping; and
- A review of the application documents for the wider Canford Resource Park (CRP) and White's Pit landfill site.

Watercourses

13.3 The EfW CHP Facility Site is located in the catchment of the River Stour which flows in a south easterly direction, approximately 1.8 km to the north east of the EfW CHP Facility Site. The River Stour is designated as Main River by the EA.

13.4 Knighton Stream flows from south west to north east approximately 180 m south east of the main body of the EfW CHP Facility Site. It is crossed by the proposed Combined Heat and Power (CHP) connection corridor. As an ordinary watercourse this comes under the jurisdiction of BCP Council.

13.5 A further un-named ordinary watercourse runs through the EfW CHP Facility Site from the north west and leaves the EfW CHP Facility Site at an outfall in the south east corner. As this has been incorporated into the surface water drainage strategy for the wider CRP, it is covered in the drainage section below.

Flood Risk

13.6 According to the EA Flood Map for Planning, the EfW CHP Facility Site is shown to be located wholly within Flood Zone 1 denoting a less than 0.1% annual probability and as such is classified as being at low risk of fluvial and tidal flooding.

13.7 The EA Surface Water Flood Maps show various areas at risk of surface water flooding between very low (less than 0.1% annual probability) and high risk (greater than 3.33% annual probability). There are areas at high and medium risk (between 3.33% and 1% annual probability) located within the (now filled in and by-passed) pond that makes up the south western half of the EfW CHP Facility Site. There are some areas at medium and low (between 1% and 0.1% annual probability) risk of surface water flooding on the north eastern part of the EfW CHP Facility Site. These are areas of ponding associated with the hard standing located in this area.

13.8 The BCP Council SFRA mapping indicates that the EfW CHP Facility Site is located in an area with greater than 75% susceptibility to groundwater flood emergence. A review of the SFRA geology mapping and the BGS online Geology of Britain indicate that the EfW CHP Facility Site is underlain by the Poole Formation composed of Sand, Silt and Clay. The ability of groundwater to rise

towards the EfW CHP Facility Site will be controlled by the exact composition of the bedrock below. The fact that the EfW CHP Facility Site is not located in a significant topographic low spot means that the risk of groundwater flooding is likely to be low.

13.9 Based on the EA's Risk of Flooding from Reservoirs mapping, the EfW CHP Facility Site is outside the maximum extent of flooding in the event of a reservoir breach. As such the risk of flooding from artificial sources can be considered low.

Drainage

13.10 The EfW CHP Facility Site is currently composed of two separate parts. The south western part is currently filled in former attenuation storage pond that forms the end of pipe treatment for runoff from both the CRP and White's Pit landfill sites. Examination of the drainage strategy drawing for White's Pit shows that the EA Permitted surface water discharge point to the Knighton Stream is located within this feature. It can safely be assumed that this feature provides both attenuation and treatment of surface water which will need to be replicated in the post-development scenario. The EfW CHP Facility Site is not served by a foul sewer system.

13.11 The north eastern part of the EfW CHP Facility Site is currently occupied by a low carbon gasification and pyrolysis energy facility within the CRP. This is a mixture of roof, hardstanding and some landscaped areas. It is assumed that the roof and hardstanding areas are currently positively drained and would discharge to the Knighton Stream through the attenuation basin that covers the other part of the EfW CHP Facility Site. The EfW CHP Facility Site is not served by a foul sewer system, the office located on the EfW CHP Facility Site currently is served by a septic tank(s).

EIA Study Area

13.12 The study area for the EIA would be the red line boundary for the application, as well as the CRP and White's Pit landfill sites due to the fact that they drain through the EfW CHP Facility Site.

Proposed Methodology

13.13 In order to comply with the National Planning Policy Framework (NPPF) and Local Policy, a Flood Risk Assessment (FRA) and Drainage Strategy would be undertaken and appended to the ES. The relevant policy includes:

- NPPF and its Planning Practice Guidance
- EN-1 - Overarching National Policy Statement for Energy
- EN-3 - National Policy Statement for Renewable Energy Infrastructure
- EN-5 - National Policy Statement for Electricity Networks Infrastructure
- Non-statutory Technical Standards for Sustainable Drainage Systems (SuDS)
- BCP Council Local Plan and Strategic Flood Risk Assessment
- BCP Council LLFA SuDS Policy and Guidance

13.14 Consultation would be undertaken with the relevant bodies such as the EA, EFDC, BCP Council and Wessex Water to obtain up to date flood risk and drainage information and to agree to the principles of the drainage and flood mitigation strategy.

13.15 The drainage strategy of the wider CRP and White's Pit landfill site would also be reviewed to ensure that the proposed drainage strategy does not interfere with these existing strategies.

13.16 The policy compliant FRA and Drainage Strategy would include the following assessments:

- Potential sources of flooding, including recorded data of previous flood events;
- Flood alleviation measures already in place, their state of maintenance and performance;
- Potential impacts of flooding to the EfW CHP Facility Site and identification of any necessary mitigation measures;
- Residual risks after implementation of necessary mitigation measures, allowing for the future impacts of climate change;
- Liaison with the design team to ensure that the watercourse crossings of the CHP connection designed meets the requirements of the EA and BCP Council;
- An assessment of surface water runoff in accordance with the BCP and DCC requirements, a proposed drainage strategy including SuDS and details on their management and maintenance;
- Demonstration that the proposed drainage strategy follows the drainage hierarchy, with surface water runoff restricted to as close to the greenfield runoff rate as reasonably practicable and/or infiltration into the ground;
- A strategy showing how the CRP and White's Pit landfill sites' drainage strategies would connect into the proposed drainage strategy;
- Consideration of the existing and proposed foul flows from the EfW CHP Facility Site; and
- Assessment and mitigation of the likely significant impacts of the Proposed Development on flood risk and drainage.

Potential Effects

13.17 It is anticipated that the Proposed Development could have the following significant effects:

- Impacts on surface water quality – water discharges from the EfW CHP Facility Site could have a potential significant effect on the surface water quality environment (Knighton Stream and the River Stour). This could also come from uncontrolled surface runoff from areas in the EfW CHP Facility Site that may be affected by contaminants.
- Impacts on conveyance within surface watercourses – the CHP crossing of Knighton Stream could reduce the conveyance within this watercourse and cause an increase in flood risk to nearby receptors.
- Impacts on runoff from the EfW CHP Facility Site – The increase in impermeable surfaces could result in increased runoff from the EfW CHP Facility Site which would increase flood risk to nearby receptors.
- Impacts on runoff from nearby sites – The removal of the attenuation basin could result in increased runoff from the wider CRP and White's Pit sites which would increase flood risk to nearby receptors.
- Impacts on groundwater quality – Uncontrolled water discharges from the EfW CHP Facility Site into the potentially permeable subsurface geology could have a significant effect on the groundwater quality environment.
- Impacts on the foul sewer system – The Proposed Development would result in an increase in foul water flows into the wider CRP and public sewer network, potentially requiring upgrade and/or reinforcement works.

Proposed Mitigation

13.18 The following mitigation will be provided to mitigate the potential effects:

- The design of the CHP connections under Knighton Stream will be informed by BCP Council's requirements.

- A surface water drainage strategy will be developed that ensures that discharges of runoff from the EfW CHP Facility Site would be in line with local and national policy requirements. Sufficient treatment would be included in the strategy to ensure that surface or groundwater quality does not deteriorate post-development. It will also ensure that runoff from the wider CRP and White's Pit do not increase.
- Capacity checks will be carried out on both the private and public sewer systems and upgrades carried out as required.

Conclusion

13.19 Based on the information set out above, the potential effects could be successfully avoided through the proposed mitigation. At this stage it is proposed that Hydrology is scoped in to the EIA.

14.0 Geology, Hydrogeology and Ground Conditions

Introduction

Existing Baseline

14.1 This report has been prepared with information obtained from Groundsure dataset (Ref. WIE18278-102_REQ113325) to support the planning application for the Proposed Development.

14.2 The current and surrounding potential contaminative land uses to the EfW CHP Facility Site are listed in the table below.

Table 14.1: On and Off-site potential contaminative uses

On-Site	Off-site
Existing EfW facility	Electricity Pylon (nearest located 614 m east)
Electricity Pylon and point of DNO connection	MRF
	Hopper (farming) located 120 m north
	MBT facility located 140 m north
	Unspecified quarries / mines located 320 m south
	Canford Business Park located 990 m north

14.3 The EfW CHP Facility Site and the surrounding area have been used for various light industrial activities including gravel pits, plant nurseries, and poultry farms, as listed in Table 14.2, Table 14.3 and Table 14.4 below:

Table 14.2: On and Off- Western section of Site's Historical Potential contaminative land uses

Date	On-site	Off-Site
1889-1901	Plant Nursery	Plant Nursery Reservoir (covered) Gravel Pit
1901	No significant change	Plant Nursery
1934-1940	No significant change	Cuttings
1963-1973	No significant change	Unspecified Ground workings
1982	No significant change	Sand and Gravel Pit Unspecified Ground workings
1988	Pond	Canford Magna
2010		Works

Table 14.3: On and Off- Southern section of Site's Historical Potential contaminative land uses

Date	On-site	Off-Site
1934-1940	Canford Magna Poultry Estate partially on site	Canford Magna Poultry Estate Unspecified quarry Gravel pit

Date	On-site	Off-Site
1954		Eastlands Farms

Table 14.4: On and Off northern section of Site's Historical Potential contaminative land uses

Date	On-site	Off-Site
1900		Unspecified Pit
1934-1940	Rydal Mount Poultry Farm	
1954-1963		Plant Nursery
1982 - 1988		Plant Nursery Pumping station
1993		Electrical Substation

14.4 A landfill historically occupied the northern section of the EfW CHP Facility Site and was primarily active between 1984 and early 1990s.

14.5 The thickness of landfill material is unknown. Details of the permits provided by the Groundsure dataset identifies the permitted waste of industrial, commercial, and household waste.

Geology

14.6 Geological maps obtained from the Groundsure dataset for the EfW CHP Facility Site indicate the geology in various areas beneath the EfW CHP Facility Site comprises of Made Ground, River Terrace Deposits and Head and the Broadstone Clay Member. This information is from a public source, but it should be noted that the whole area for the Proposed Development is now made ground with all pre-existing ponds and lagoons having been filled to make the development platform used for the low carbon energy centre.

Groundwater

14.7 The nearest natural surface water features on and close to the EfW CHP Facility Site obtained from the Groundsure dataset are:

- On Site: On ground surface lake, loch, or reservoir on ground surface (now filled in as part of the consent for the existing low carbon energy centre)
- On ground surface inland river (not influenced by normal tidal action) (now filled in)
- Underground inland river (not influenced by normal tidal action)

14.8 The closest surface water body catchment is the River Stour which is approximately 0.8 km north from the closest point of the EfW CHP Facility Site.

14.9 The aquifer status of the Made Ground, River Terrace Deposits, Head and Broadstone Clay Member is shown in the table below:

Table 14.4: Aquifer Status

Stratum	Typical Description	Hydrogeological Significance
Made Ground	Artificial Deposits	Not classified
Head	Clay, silt, sand, and gravel	Secondary Undifferentiated Aquifer

Stratum	Typical Description	Hydrogeological Significance
River Terrace Deposits	Sand and gravel.	Secondary A Aquifer
Broadstone Clay Member	Silty Clay	Secondary A Aquifer

14.10 There are two active groundwater abstractions close to the EfW CHP Facility Site listed in the table below:

Figure14.5: Groundwater Abstractions

Name	License	Direct Source	Details
Canford Park Sports Limited	13/43/037/G/131	Ground water -Fresh	Process water
			Spray irritation
W H White Limited	13/43/037/G/115		Mineral washing

EIA Study Area

14.11 The Groundsure report includes environmental information within 1 km of the EfW CHP Facility Site. Consultation with regulators will typically provide information on the EfW CHP Facility Site and potentially information within 250 m of the EfW CHP Facility Site.

Proposed Methodology

14.12 The Ground Conditions assessment comprises preparation of a Preliminary Risk Assessment (PRA) report in accordance with current legislative requirements and Land Contamination Risk Management (LCRM) published by the Environment Agency (19 April 2021) and BCP Council local planning guidance.

14.13 The PRA will include a site inspection, site description and a review of the EfW CHP Facility Site's history, geology, hydrology, and hydrogeology. The PRA will also report on the implications of any consultations undertaken with pertinent statutory authorities and data suppliers. The PRA will consider the potential effects of the Proposed Development on ground conditions and the potential risks of the ground conditions on construction workers and future users of the Proposed Development. It will conclude with an environmental assessment, clearly indicating the potential environmental risks relating to ground conditions.

Potential Effects

14.14 In consideration of the above, potential ground condition and contamination effects to be addressed include:

- Human health risks to workers during construction from any contaminated soils;
- The historical use of the northern section of the EfW CHP Facility Site for landfilling between 1984 and early 1990s presents a possible risk to the environment, principally controlled water receptors and human health receptors during and post Development completion;
- Risks to future site users from residual contamination, ground gas and vapour;
- Risks to vegetation in landscaped areas from residual contamination;
- Direct contact, ingestion and inhalation of potentially contaminated shallow soils and groundwater by ground workers and construction workers during redevelopment works;

- Inhalation of vapours by ground workers and construction workers during redevelopment works;
- Off-site migration of contaminated groundwater to surface water receptors;
- The creation of new pollution pathways (for example via piling) through which any existing ground contamination may migrate to underlying aquifers; and
- The appropriate management of any contaminated soils or hazardous materials that require treatment or removal from the EfW CHP Facility Site.

Proposed Mitigation

14.15 Likely mitigation measures include the following:

- The information reviewed in the PRA will inform a Ground Investigation Strategy and Specification which will set out the ground investigation required to address the information gaps identified and reduce uncertainties;
- The results of the ground investigation will be assessed in relation to the Proposed Development and incorporated in a Contaminated Land Interpretative Report. This report will include an update to the conceptual model assessed in the PRA with potentially active pollutant linkages identified;
- Preparation of a Remediation Strategy to manage any residual ground contamination risks remaining following completion of the Contaminated Land Interpretative report; and,
- Preparation of a Foundation Works Risk Assessment for piling and other penetrative activities, to minimise groundwater impacts and the creation of pollution pathways.

Conclusion

14.16 The EfW CHP Facility Site is in a moderately sensitive environmental setting being underlain by Secondary Aquifers and with groundwater abstraction wells nearby. There is potential for contamination under the EfW CHP Facility Site from previous uses and in landfills nearby. The Proposed Development could potentially give rise to significant environmental effects from piled foundations and ground disturbance during construction.

14.17 Based on the above, ground conditions will be scoped into the EIA.

15.0 Population and Health

Introduction

15.1 This section of the Scoping Report presents an assessment of the potential Population and Health effects of the of the Proposed Development. The approach proposed in this Scoping Report has been informed by ongoing desk studies, reference to published best practice guidance and professional judgement.

Existing Baseline

15.2 The following section provides an interpretation of local health conditions for unitary authority wards of Bearwood and Merley in BCP Council, within the South West region of England. Notably, several health indices in Bearwood and Merley are significantly better than the national average, including the incidence of lung cancer, chronic obstructive pulmonary disease, and deaths from respiratory disease; see table below. Two (2) indicators that were identified as being significantly worse than the national average were the emergency hospital admissions for coronary heart disease SAR (i.e., 116) and the hospital stays for self-harm (i.e., 138). Additionally, BCP Council has several indices which have been highlighted as being significantly worse when compared to the national average, see below.

15.3 Overall, the health for Bearwood and Merley is similar to or better than the national health averages. As such, based on the high-level review of the health indicators, the communities surrounding the Proposed Development are not considered disproportionately sensitive to environmental changes. A detailed health and wellbeing baseline will be completed as part of the population and health chapter where sensitive receptors, such as schools in the area, will be appropriately considered and assessed.

Table15.1: Life expectancy and physical health statistics

Indicator	Date	Bearwood and Merley	Bournemouth, Christchurch and Poole	England average
Life expectancy				
Life expectancy at birth for males	2015-19	83.4	80.3	79.7
Life expectancy at birth for females	2015-19	84.1	83.5	83.2
Hospital admissions/disease incidence				
Emergency hospital admissions for all causes (SAR)	2015-16 to 2019-20	97.2	112.8	100
Emergency hospital admissions for coronary heart disease (SAR)	2015-16 to 2019-20	116	122.4	100
Emergency hospital admissions for stroke (SAR)	2015-16 to 2019-20	100.9	112.3	100
Emergency hospital admissions for myocardial infarction (SAR)	2015-16 to 2019-20	96.2	108	100
Emergency hospital admissions for chronic obstructive pulmonary disease (SAR)	2015-16 to 2019-20	59.3	102.4	100
Incidence of all cancer (SIR per 100)	2012-16	105.1	104	100
Incidence of breast cancer (SIR per 100)	2012-16	113.6	114.6	100
Incidence of colorectal cancer (SIR per 100)	2012-16	106.6	102.7	100
Incidence of lung cancer (SIR per 100)	2012-16	62.4	88.5	100
Incidence of prostate cancer (SIR per 100)	2012-16	102.4	105.6	100
Hospital stays for self-harm (SAR)	2020-2021	138	171.8	100
Causes of deaths - premature mortality, Standardised Mortality Ratios (SMR)				

Indicator	Date	Bearwood and Merley	Bournemouth, Christchurch and Poole	England average
Deaths from all causes under 75 years (SMR)	2015 to 2019	69.9	93.8	100
Deaths from all cancer under 75 years (SMR)	2015 to 2019	90.2	96.4	100
Deaths from circulatory disease under 75 years (SMR)	2015 to 2019	37.7	82.8	100
Deaths from causes considered preventable under 75 years SMR (SMR)	2015 to 2019	53.3	94.7	100
Causes of deaths - all ages, Standardised Mortality Ratios (SMR)				
Deaths from all causes all ages (SMR)	2015 to 2019	81	96.9	100
Deaths from all cancer all ages (SMR)	2015 to 2019	90.6	97.5	100
Deaths from circulatory disease all ages (SMR)	2015 to 2019	82.4	93.5	100
Deaths from coronary heart disease all ages (SMR)	2015 to 2019	77.5	92.1	100
Deaths from stroke all ages (SMR)	2015 to 2019	98.6	97.7	100
Deaths from respiratory diseases all ages (SMR)	2015 to 2019	66.2	84.9	100
Key:				
	Significantly better than the England average			
	Significantly worse than the England average			
	Not significantly different than the England average			

Source: Public Health England Local Health (Public Health England, n.d.)

EIA Study Area

15.4 The Proposed Development is situated within the South West region and would complement the existing facility known as Canford Resource Park (CRP), off Magna Road. The geographic extent of the health baseline data to be collected is a function of the issues and opportunities to be explored. Environmental health determinants (such as changes to air quality and noise exposure) are likely to have a more local impact where the potential change in hazard exposure is limited by physical dispersion characteristics. As a result of the preliminary analysis, the local study area for health-specific baseline statistics would focus on the Unitary Authority Wards of Bearwood and Merley, using the regional (South West) and national (England) averages as comparators, along with data for BCP Council where applicable.

15.5 Socio-economic health determinants (such as employment and related income generation) have a wider geographic scope of influence than environmental health determinants due to the willingness to commute significant distances to work. However, for this project, the wider study area for socio-economic baseline statistics continues to focus on the Unitary Authority Wards of Bearwood and Merley, along with the data for the Unitary Authority of BCP.

15.6 The study area defining the relevant sensitive receptors identified for assessment purposes remains consistent with the inter-related technical disciplines assessed within the planning application, which the population and health chapter relies upon.

Proposed Methodology

15.7 The current EIA Regulations reinforce population and health within the planning and assessment process, but do not provide definitive guidance on the approach, process or methodology to follow. While this is the case, the assessment methodology follows a source-pathway-receptor model to identify and assess population and health effects that are plausible and directly attributable to the Proposed Development. As shown in Table 15.2, a hazard source by itself does not constitute a

health risk: it is only when there is a hazard source, a sensitive receptor and a pathway of exposure that there is a potential risk to human health. The same is true for potential health benefits where a positive influence must be present alongside a pathway of exposure, and a receptor for there to be a potential health improvement.

Table 15.1: Source-pathway-receptor model

Source	Pathway	Receptor	Plausible health impact	Explanation
x	✓	✓	No	There is not a clear source from where a potential health impact could originate.
✓	x	✓	No	The source of a potential health impact lacks a means of transmission to a population.
✓	✓	x	No	Receptors that would be sensitive or vulnerable to the health outcome are not present.
✓	✓	✓	Yes	Identifying a source, pathway and receptor does not mean a health outcome is a likely significant effect; health impacts should be assessed (describing what effect will occur and its likelihood) and the potential health effects are then evaluated for significance.

15.8 The proposed assessment method for the population and health topic is to draw from and build upon information and parameters detailed within the project description and key outputs from inter-related technical disciplines to determine the potential population (including income and employment factors) and health effects attributable to the Proposed Development.

15.9 In addition to determining the socio-economic effects of the Proposed Development, the following health determinants are anticipated to be included within the assessment of effects for both the construction and operational phases:

- Changes in local air quality;
- Changes in noise exposure;
- Changes in transport nature and flow rate; and
- Changes in socio-economic effects (income and employment factors).

15.10 Due to the nature of the Proposed Development, the assessment of health effects from changes in local air quality would be quantitative in nature. Specifically, concentration-response functions (CRFs) recommended in the World Health Organisation's (WHO) Health Risks of Air Pollution in Europe (HRAPIE) guidance are proposed to be applied with the absolute change in air quality (in $\mu g/m^3$), population estimates, and various baseline health data for the study area. Data permitting, the exposure assessment would be done using grid outputs from the air quality discipline across Lower Super Output Areas (LSOAs). This process would link in with the assessment described in the section above in assessment of air quality effects.

15.11 The assessment of all other health determinants (changes in noise exposure, changes in transport nature/flow rate and changes in income/employment factors) is proposed to be undertaken qualitatively.

15.12 The assessment of changes in non-ionising radiation (EMF) from the generation and transmission of electricity, are not scoped in, as the project will comply with the Department for Energy and Climate Change (DECC) Voluntary Code of Practice and are therefore compliant by design with

guideline exposure levels set to protect public health. On this basis, potential EMF risk is not significant; modelling and assessment is not required; and it is proposed to scope out a health assessment from changes in exposure to EMF. However, should any community EMF health concerns be raised during consultation, an appropriate section will be provided within the health assessment to investigate and address the concern.

Potential Effects

15.13 While the magnitude of impact and associated significance of effect would be determined during the main assessment, the scale and direction of effects can be defined at this stage and is provided in Table 15.3. It should be noted that where a negative effect has been identified, it is then the nature of the specific hazard source; the magnitude of impact via the pathway of exposure; and the sensitivity of the receptor that will determine what level of health risk or benefit is predicted, if any.

Table 15.2: Direction of effect – population and health outcomes

Health determinant	Scale of effect	Direction of effect
Construction Phase		
Socio-economic effects (income and employment)	Regional	Positive
Health effects of changes in air quality	Local	Negative
Health effects of changes in noise exposure	Local	Negative
Health effects of changes in transport nature and flow rate	Local	Negative
Health effects of changes in socio-economic factors (income and employment)	Regional	Positive
Operational phase		
Socio-economic effects (income and employment)	Regional	Positive
Health effects of changes in air quality	Local	Negative
Health effects of changes in noise exposure	Local	Negative
Health effects of changes in transport nature and flow rate	Local	Negative
Health effects of changes in socio-economic factors (income and employment)	Regional	Positive

Proposed Mitigation

15.14 Public health is, by definition, preventative in nature. Therefore, mitigation measures adopted as part of the construction and operation of the Proposed Development will focus on precursors to health and wellbeing outcomes, thereby providing an opportunity for intervention to prevent any adverse health outcome.

15.15 During construction, best practice measures detailed within a dedicated Construction Environmental Management Plan (CEMP) will control the generation or release of environmental pollutants with the potential to cause adverse health and wellbeing outcomes. During operation, mitigation measures protective of population and health would be embedded within the design of the facility itself e.g. through the application of specific abatement technology and will be controlled by the Environmental Permit.

Conclusion

15.16 The potential hazards associated with the construction and operation of a conventional EfW facility are well known, understood and addressed through planning and permitting such that well run facilities present a negligible impact on environmental circumstance and no tangible risk to public health. The Population and Health Chapter will test each of the listed health pathways to confirm this.

16.0 Carbon and Greenhouse Gases

Introduction

16.1 This section of the Scoping Report considers the assessment of potential impacts on:

- a) climate change i.e. the impact of greenhouse gas emissions (GHGs) caused directly or indirectly by the Proposed Development; and,
- b) the potential effect of climate change on the Proposed Development.

Existing Baseline

16.2 The current baseline is the regional climate and weather patterns, recorded in recent Met Office data in the context however of trends in global climate changes affecting the UK climate, which are sufficiently well understood to be considered part of the known baseline.

16.3 The current baseline, in terms of GHG emissions, includes the GHG emissions arising from the existing treatment or disposal of waste, offset by the GHG emissions from other generation sources that the Proposed Development would displace due to the electricity it exports. Trends in this baseline are also known, principally the ongoing decrease in carbon intensity of grid electricity generation.

EIA Study Area

16.4 GHG emissions would contribute to the effect of global climate change, but the study area focuses on the area within which waste arises and products are supplied to. This is centred on the local and neighbouring authorities.

Proposed Methodology

16.5 Direct and indirect operational GHG emissions caused by the Proposed Development will be calculated based on the waste transport, throughput tonnage, typical composition and energy efficiency balance for the Proposed Development. The emissions of displaced grid electricity generation due to exported electricity, avoided emissions from landfill disposal of waste, and emissions associated with disposal/re-use of combustion residues will also be calculated, and from this the net emissions attributable to the EfW CHP Facility will be derived.

16.6 Annual operational GHG emissions and cumulative total GHG emissions over the proposed operating lifetime (taking into account changes in the future baseline such as grid electricity generation decarbonisation, where feasible) will be presented in the ES. Emissions factors and projections published by BEIS and Defra or other literature sources will be used as required.

16.7 Indirect construction-stage GHG emissions caused by the Proposed Development will be estimated based on published lifecycle emissions factors for the construction materials whose volume and carbon intensity are estimated to be most significant (e.g. concrete and steel) and for major engineered components (e.g. steam turbine and boilers), from available design information. If design information or sufficient materials estimates are not available, estimates of the construction-stage emissions' contribution to total lifecycle total will be made based on published literature sources.

16.8 There are no clear, generally agreed thresholds or methods for evaluating the significance of GHG impacts in EIA. The IEMA guidance referenced above recommends contextualising a development's GHG impacts, for example on a sectoral basis or compared to the UK's national

carbon budget.

16.9 It is considered that, broadly speaking, the significance of the Proposed Development's GHG emissions can be established in the following ways:

- with reference to the absolute magnitude of net GHG emissions as a percentage of the UK's national carbon budget;
- through considering the net change in GHG emissions compared to a business-as-usual baseline of landfilling waste;
- through comparing the GHG emissions intensity of the EfW CHP Facility to baseline emissions intensity for electricity and heat generation that is displaced, and
- projections for future changes in that baseline; and/or with reference to whether the Proposed Development contributes to and is in line with the UK's national carbon budget sectoral goals for GHG emissions reduction, which are consistent with science-based commitments to limit global climate change to an internationally agreed level.

Potential Effects

16.10 In theory, significant effects are possible due to the construction, operational and decommissioning stage GHG emissions; and/or vulnerability of the Proposed Development to climate change during its operational lifetime and eventual decommissioning.

16.11 GHG emissions would contribute to the effect of global climate change. Assessment guidance (IEMA, 2017) suggests that any GHG emissions may be considered to be significant and advocates that GHG emissions should be reported at an appropriate, proportionate level of detail in an ES.

Construction

16.12 With regard to construction-stage GHG emissions, the main impact would be the 'embodied carbon' in construction materials used, i.e. the indirect GHG emissions from the supply chain for those materials, particularly for concrete and steel. These are expected to be relatively minor compared to operational emissions but will be estimated to consider whether effects may be significant. Opportunities to use recycled steel and locally sourced aggregate/low carbon concrete will be explored with the design team. Direct GHG emissions from construction activities (e.g. fuel consumption by construction plant) are judged to be inconsequential, regulated by other legislation and are not proposed to be assessed. This will be further justified in the assessment.

Operation

16.13 During operation the main impact would be direct GHG releases from waste combustion, comprising mainly carbon dioxide (CO_2) and nitrous oxide (N_2O). By comparison emissions from transport of waste and combustion residues are minor. There is also some uptake of atmospheric CO_2 by bottom ash during its weathering and there is the opportunity to use bottom ash as an aggregate replacement in low carbon concrete and e.g. road construction, with indirect emission reductions. Savings can also be made by the recovery and recycling of ferrous and non-ferrous metals, if these are present, from both residual waste pre-treatment and bottom ash treatment.

16.14 Generation of energy and treatment of waste would avoid GHG emissions from baseline energy generation (e.g. electricity generators or boilers at heat customer sites) and from baseline waste treatment, assumed to be landfill or another energy from waste facility for residual waste.

16.15 Combustion of waste will give rise to both fossil carbon emissions (e.g. from plastics, during which process it will effectively dispose of residual waste plastic materials) and short-cycle biogenic

carbon from the organic fraction of the waste. While both would be assessed, the effect of short-cycle biogenic CO_2 on net atmospheric concentration is net neutral, so only fossil carbon would potentially contribute to a significant net effect.

Decommissioning

16.16 Decommissioning stage GHG emissions are very unlikely to be significant and are proposed to be scoped out of the assessment for the following reasons:

- decommissioning emissions would be substantially lower than construction stage impacts, and the EfW CHP Facility will be designed to enable deconstruction and recovery/recycling of the majority of steel/other metals, together with concrete recycling/re-use with embodied carbon recovered and recycled;
- if disposed of and not recycled, the materials are likely to be mainly inert waste (e.g. metals, concrete), which would not generate GHG emissions from decomposition or incineration; and
- national decarbonisation in line with climate change targets is expected to be such that GHG emissions from decommissioning-related activity would be substantially lower in the future, post 2050.

16.17 With regard to the impacts of climate change on the Proposed Development, the main impact is change in flood risk due to sea level change, river flow change, and change in peak rainfall intensities and/or the probability of extreme rainfall events. This impact could affect flood risk on the EfW CHP Facility Site or could modify the flood risk caused by the Proposed Development to other receptors. This impact will be assessed in the hydrology and flood risk assessment.

16.18 Changes in climate over the Proposed Development's operational lifetime may also stress the ecosystems of designated habitats in the local area, potentially reducing their resilience to any environmental impacts from the development (e.g. nitrogen deposition). If relevant, this will be considered in the ecology assessment.

Cumulative effects

16.19 GHG emission impacts by their nature are cumulative with all global sources, and the best way to establish whether cumulative effects are significant is at the national and sectoral carbon budget levels.

Transboundary effects

16.20 GHG emission impacts by their nature lead to a trans-boundary effect on global climate change, so this forms part of the assessment. The impacts of climate change, which is itself transboundary, on effects such as flooding associated with the Proposed Development would be at the local scale.

Proposed Mitigation

16.21 The EfW CHP Facility will be designed to be efficient in terms of its own electricity demands and the conversion of the chemical energy in waste to electricity and heat. In addition, it will be ready to be retrofitted with carbon capture equipment, for which space has been reserved. Such equipment has the potential to substantially reduce the EfW CHP Facility's net carbon emissions. Opportunities to reduce embodied carbon will be explored, together with the use of locally supplied materials, and contractors, where their skills meet requirements, and a circular economy approach will be applied to the building construction and design.

16.22 The Proposed Development will be designed to be ready to deliver heat to the nearby Magna Business Park, in the form of hot water, as part of a CHP network. This would follow widely

deployed models in northern continental European cities and in several UK, cities including Sheffield, Nottingham, Coventry, parts of London, Dundee and Plymouth.

Conclusion

16.23 Based on the information set out above, at this stage it is proposed that an assessment of Carbon and Greenhouse Gases is scoped in to the EIA.

17.0 Consultation

17.1 This Scoping Report is a formal process whereby the Council and statutory consultees are requested to provide their views on the scope of the EIA and the environmental assessments to be undertaken.

17.2 In addition to the formal scoping process, the Applicant would, as part of its work in preparing the ES and planning application, liaise as required with relevant statutory and technical consultees as follows:

- National Highways;
- BCP Council (Environmental Health and Planning, Highways Authority, Waste Disposal Authority);
- Environment Agency;
- Natural England;
- Historic England;
- Dorset Wildlife Trust (DWT);
- Wessex Water (Sewerage Undertaker) Bournemouth Water/ SW Water (Water Supply Undertaker); and,
- Scottish and Southern Electric (Distributed Network Operator).

17.3 Consultation will be undertaken with businesses located on and near CRP. There will also be public consultation on the Proposed Development during the period before submission of the planning application.

17.4 Subject to the Proposed Development becoming operational, it is likely that a neighbourhood liaison group will be formed. Whilst much of the emphasis on EIA is on consultation with expert and statutory consultees, local communities have knowledge and insights which are often useful, particularly in devising mitigation to lessen the magnitude of environmental effects.

18.0 Conclusions and Next Steps

Conclusion

18.1 On the basis of the information set out in this document it is considered the following should be the principal matters examined in the ES:

- Transport;
- Air Quality;
- Noise and Vibration;
- Ecology and Nature Conservation;
- Landscape and Visual Impact;
- Historic Environment;
- Hydrology;
- Geology, Hydrogeology and Ground Conditions;
- Population and Health; and,
- Carbon and Greenhouse Gases.

18.2 It is proposed the following should be considered secondary matters which, whilst they remain of importance, are not of themselves of sufficient significance to have made the project EIA Development:

- Waste; and,
- Major Accidents and Disasters.

18.3 The EIA will be compiled into an ES document which will be produced in accordance with the 2017 Regulations and will comprise three main components.

Volume 1: Environmental Statement – text and figures

- Chapter 1 Introduction
- Chapter 2 Site description
- Chapter 3 Scheme description, design iterations and mitigation
- Chapter 4 Approach to assessment, scoping, alternatives
- Chapter 5 Transport
- Chapter 6 Air quality
- Chapter 7 Noise and vibration
- Chapter 8 Ecology and nature conservation
- Chapter 9 Landscape and visual impact
- Chapter 10 Historic environment
- Chapter 11 Hydrology
- Chapter 12 Geology, hydrogeology, and ground conditions

- Chapter 13 Population and Health
- Chapter 14 Carbon and greenhouse gases
- Chapter 15 Summary of mitigation, residual, and interaction effects

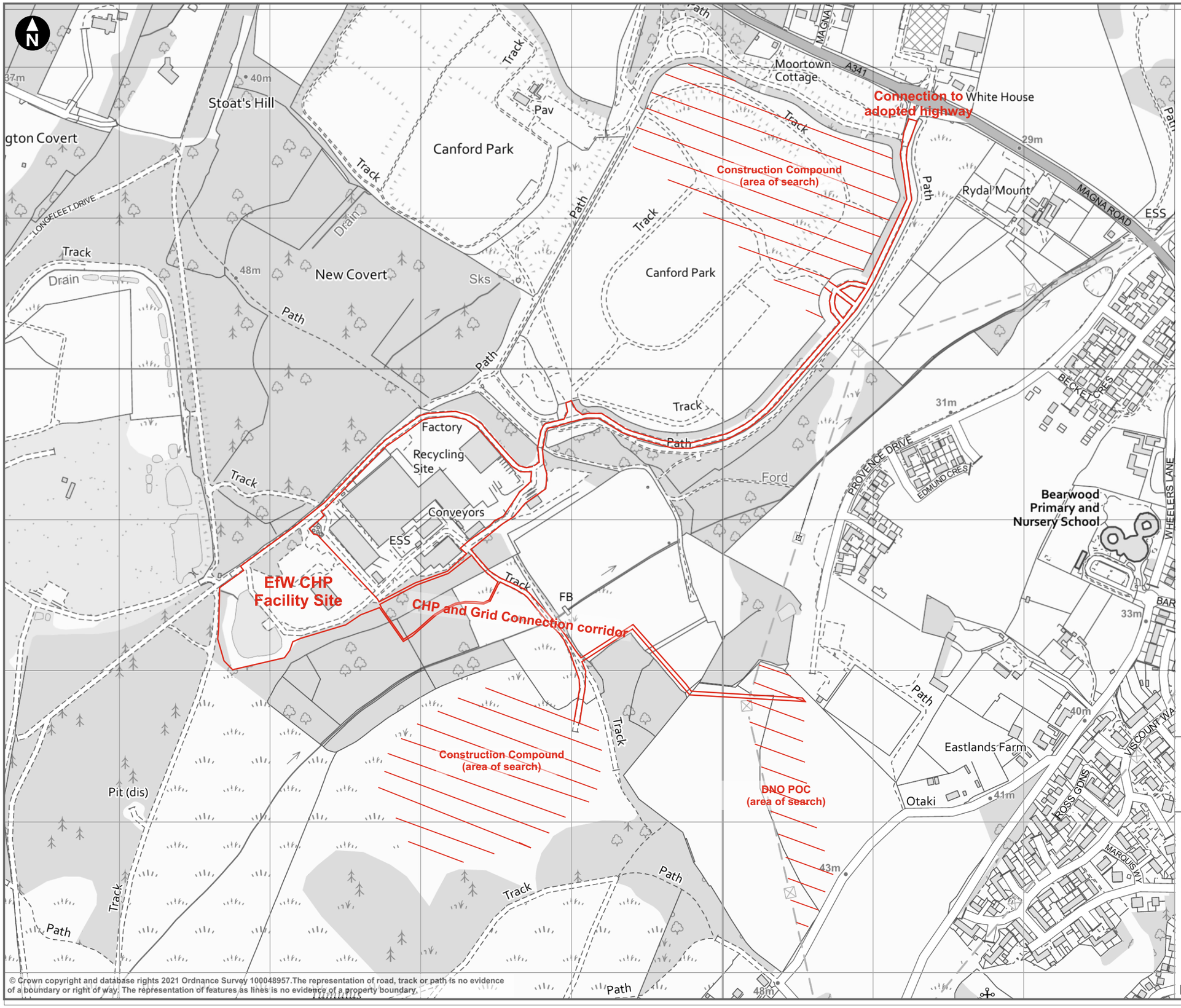
Volume 2: Technical Appendices

- Supporting technical information for the assessment chapters.

Non-Technical Summary

Figures

1.2 Redline Boundary Plan
11.1 Zone of Theoretical Visibility and proposed viewpoints



© Crown copyright and database rights 2021 Ordnance Survey 100048957.The representation of road, track or path is no evidence of a boundary or right of way. The representation of features as lines is no evidence of a property boundary.

Note:
Draft red line boundary and areas of search for EIA Scoping purposes

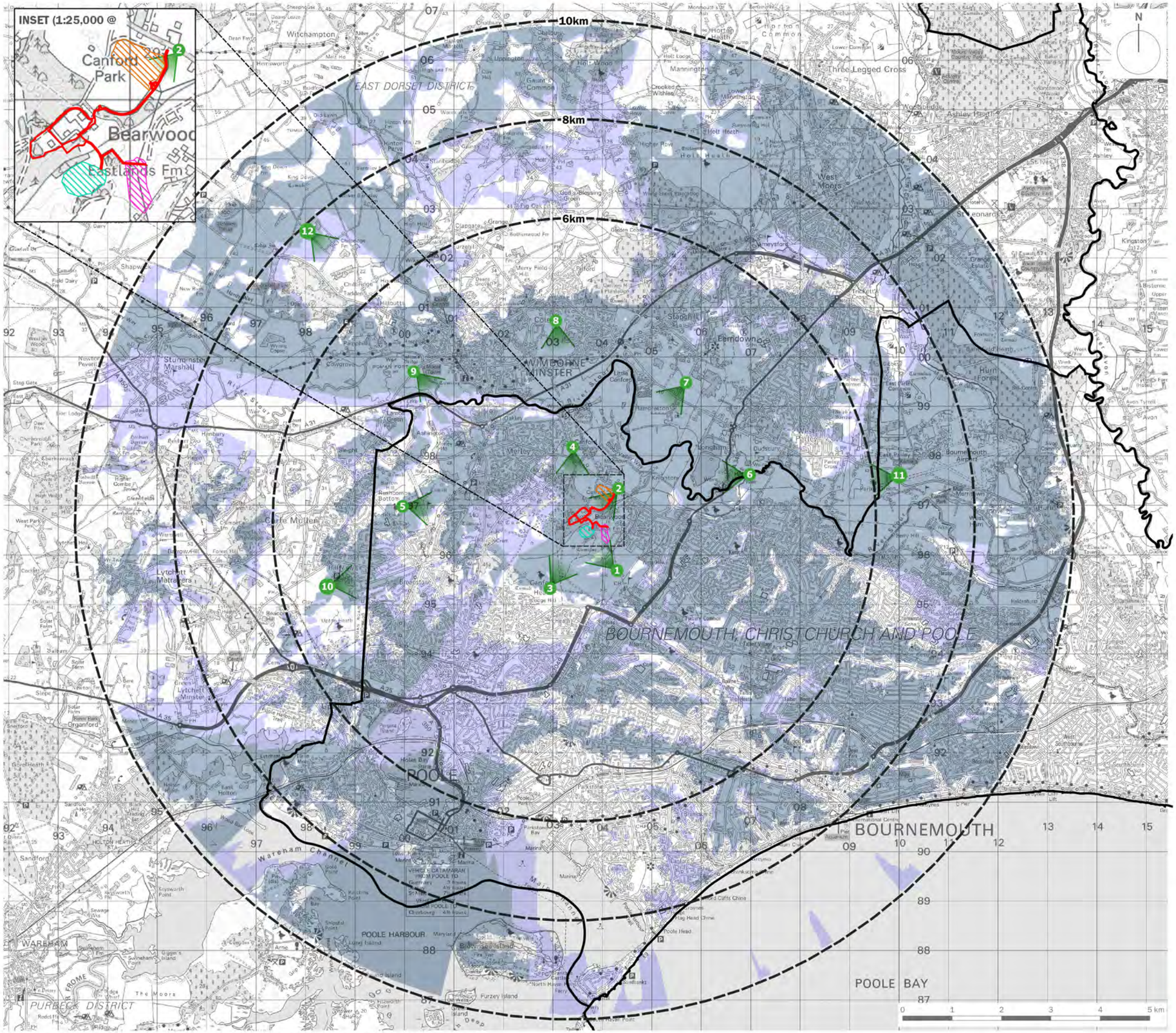
0m 1cm = 50m 250m

Scale 1:5000

Canford EfW CHP Facility
EIA Scoping Report

Red Line Boundary

February 2022 Drawing Ref: CEfW001v12



Site Boundary

Range Rings (at 2km intervals)

Local Authority Boundary

Theoretical Visibility of Building (50m)

Theoretical Visibility of Chimney (90m)

Construction Compound Area of Search - North

Construction Compound Area of Search - South

DNO Point of Connection Area of Search

Proposed Representative Viewpoint Locations

NOTE
Zone of Theoretical Visibility (ZTV) was calculated using a spatial modelling algorithm which considers the following parameters:
- 1.6m Receptor Elevation (Observer Height)
- 90m Proposed Chimney Height and 50m Proposed Building Height
- 360 Degree Field of View
- OS Terrain 5m Digital Terrain Model (DTM) (vertical accuracy of +/- 2.5m)

client

MVV Canford

project title

Canford Energy From Waste

drawing title

Figure 11.1: Indicative ZTVs and Proposed LVIA Viewpoints

date	**05 APRIL 2022**	drawn by	**CJM**
drawing number	**edp7095_d001c**	checked	**MA**
scale	**1:75,000 @ A3**	QA	**RB**

the environmental dimension partnership

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