

Technical Note

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| Author: | Atkins | | |
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1. Introduction

A planning application has been submitted to Hampshire County Council (HCC), as Waste Planning Authority for the development of an Energy Recovery Facility (ERF) and Associated Infrastructure at Alton Materials Recovery Facility, A31, Alton GU34 4JD (planning application 33619/007).

The ERF comprises a power station to recovery energy from non-hazardous residual waste. The facility would process 330,000 tonnes of waste per annum and generate approximately 33 MW of electricity. The site is in a predominantly rural location, located adjacent to the A31 dual carriageway, approximately two kilometres to the east of the town of Alton.

Atkins have been commissioned by HCC to review the air quality assessment in Veolia's Environmental Statement (ES) for the Alton Advanced Energy Recovery Facility (AAERF) that has been submitted with their planning application. This review includes air quality and climatic impacts and considers whether the assessment is robust and meets the requirements of the Environmental Impact Assessment (EIA) Regulations.

The findings of the review are presented here and provide comment as to the validity of the conclusions presented, and the suitability of methods employed, and criteria used for evaluation. This air quality review will form part of HCC's overall response to the planning application and will be referred to in the Planning Officer's recommendation report on the planning application.

The air quality specialists undertaking the review all have at least ten years' experience in air quality assessment, are full members of the Institution of Environmental Sciences (IES) and Institute of Air Quality Management (IAQM) and are Chartered Scientists and/or Chartered Environmentalists.

2. Methodology

2.1. Air quality

The air quality review comprised the following tasks:

- Review of the Environmental Statement focussing on Chapter 8 Air Quality, with reference as required for context to the more generic information in other chapters and supporting technical appendices.
 - assessment of emissions from operational traffic and construction traffic;
 - construction dust assessment, including Appendix 8.2;
 - assessment of emissions from operational stack emissions on residential receptors, including Appendix 8.3;
 - assessment of Human Health Risk Assessment, including Appendix 8.4; and
 - assessment of emissions from operational AAERF stack emissions on ecological receptors including Appendix 8.5.
- Review of statutory consultations in relation to air quality including those from HCC's public health team, East Hampshire District Council (EHDC), Natural England, Public Health England (PHE) and Parish Councils.
- Review of the air quality response from the No Way Incinerator (NWI) group, including technical comments from consultants employed by NWI.

Comments on individual local representations are not provided at this stage.

2.2. Climatic Impacts

The climatic impacts review comprised the following tasks:

- Review of section 4.8 'Climate Change' of the Environmental Statement, including the 'Impact of the Project on Climate' and 'The Vulnerability of the Project to Climate Change',
- Review of Appendix 4.3 'Carbon Assessment'.

- Review of statutory consultations in relation to air quality including those from HCC's public health team, East Hampshire District Council (EHDC), Natural England, Public Health England (PHE) and various Parish Councils
- Review of the climate change response from the No Way Incinerator (NWI) group.

Comments on individual local representations are not provided at this stage.

3. Air Quality Assessment

3.1. Review of Environmental Statement

The Air Quality Assessment is reported in Chapter 9 of the ES and accompanying Appendices 8.1 to 8.4. The ecological interpretation of the air quality results is presented in Appendix 8.5.

3.2. Legislation and policy

Appropriate references are made to EU and UK regulations, policy and guidance documents for air quality (inter alia, those published by DEFRA, LAQM, IAQM, EA, EU BREF). It is, however, unclear whether the East Hampshire District Council (EHDC) Local Plan has been considered which may have implications for the assessment with regard to in-combination impacts.

Schedule 4 to the EIA Regulations sets out the information to be included in an ES. Compliance with these requirements is summarised in Table 2.1 of the ES. These requirements are presented below with cross referencing to relevant sections of the Air Quality chapter:

- A description of operational characteristics – A summary is provided at paragraph 8.1.1 of the ES.
- A description of baseline conditions – These are presented in Section 8.3 of the ES and Appendix 8.1.
- A description of receptors that may be significantly affected – These are described in paragraphs 8.3.4 to 8.3.14, and identified on Figures 8.1 to 8.4.
- A description of likely significant effects – These are presented in Section 8.4 of the ES.
- A description of the assessment methodologies employed – These are presented in Section 8.2 of the ES. Limitations are presented at paragraph 8.2.34.
- A description of mitigation - These are presented in paragraphs 8.4.1 to 8.4.5 and Section 8.6 of the ES.
- Provision of a reference list - Table 2.1 of the ES indicates that references are provided within each topic chapter. Chapter 8, Air Quality, does not include either footnotes or endnotes for references, although relevant documentation is identified within the text where appropriate. Full references are provided as footnotes within technical appendices 8.2 to 8.5.

Regulation 18(5) requires that assessment is completed by competent experts. For air quality, appropriate evidence is presented at paragraph 8.1.3 of the ES.

Regulation 18(4)(a) of the EIA Regulations requires an ES to be based on the direction of the Scoping Opinion. In relation to air quality, this is referenced at paragraph 8.2.7 of the ES. The additional consideration of BAP Priority Habitats requested by HCC has been included in the assessment (ES paragraph 8.3.12).

3.3. Methodology

The methodology is set out in Section 8.2 of the ES. The assessment focuses on construction phase dust emissions, operational stack emissions (with associated Human Health Risk Assessment (HHRA)) and operational dust and odour fugitive emissions.

The Applicant has used an appropriate selection of guidance covering:

- Construction dust assessment (IAQM, 2014)
- Odour assessment for planning (IAQM, 2018)
- Construction and operational traffic (IAQM, 2017)
- Stack emissions (Environment Agency online guidance for permitting, IAQM, 2017, Planning for development control, HMIP methodology for dioxins, USEPA human health risk assessment protocol)
- Ecological impacts (Environment Agency online guidance, IAQM 2019)

3.4. Baseline

A range of baseline data sources have been used, which is appropriate given the wide variety of pollutants under consideration. All relevant pollutants have been included.

Regarding source selection:

- Latest EHDC monitoring data has not been included (this should now be available for 2019);
- Inconsistent selection of data source for metals and dioxins (rural for one, urban the other)
- DEFRA 2001 mapped values were used rather than measured for benzene, CO and SO₂ while the DEFRA AURN rural site at Harwell would likely to be representative despite distance;
- Mapped NO_x concentrations taken from DEFRA website used instead of APIS values for each ecological site.

In Appendix 8.1, Section 1.2 presents measured data, Section 1.3 presents DEFRA mapped backgrounds; the measured urban background nitrogen dioxide concentration is lower than the mapped background for the grid square containing the monitoring site. Therefore, as a conservative estimate the maximum mapped background concentration over the modelling domain, as presented in Table 2, has been used as the baseline concentration for nitrogen dioxide for the assessment. The maximum mapped background concentration estimate of 14.79 µg/m³ was based on the DEFRA 2017 dataset.

It is deemed reasonable to use the higher mapped background estimate and not the lower measured value.

We have compared the background NO₂ concentration used by the Applicant with monitoring from the survey Atkins is undertaking for HCC in Bordon. The concentration in 2019 at the A325 junction at Whitehill (not a free flowing section of road) was 23 µg/m³ and set back from this location on Oakhanger Road was 13 µg/m³. Concentrations within ecological sites at 25 metres back from the road edge were 7 to 13 µg/m³. Therefore the Applicant's selected background concentration estimate is reasonable.

Trends in recent local authority monitoring data suggest there has been limited improvement in air quality over the last five years. No consideration has been given to the potential impact on existing concentrations of the A31 growth corridor as set out in EHDC's Local Plan.

The Applicant has not identified AQMAs in the wider area, which may be affected by traffic movements. Further information is required in order to exclude impacts within AQMAs, for which the IAQM has set more stringent traffic change criteria.

The Applicant has not identified DEFRA PCM road links which could present a constraint and compliance risk. A comment is required in this regard in order to rule out any potential impacts.

3.5. Assessment

3.5.1. Construction dust emissions

The assessment has been completed in accordance with the appropriate IAQM methodology. Presentation of the methodology in Appendix 8.2 lists criteria for sensitivity to human health impacts (Table 6) relevant to Scotland rather than England. Nonetheless, the identification of receptors, assignment of dust risk magnitude, area sensitivity and determination of dust risk impacts as "low" are all considered correctly undertaken and valid.

HCC may wish for the Applicant to consider the impact of construction dust on neighbouring BAP sites and thus identify if there is a need for additional mitigation in the CEMP

The requirement for environmental assessment of the effects of the grid connection was scoped out in the Scoping Report (Section 3.9). Section 4.6 of the ES provides a description of the anticipated route for laying of cabling to a local substation using open trench cut and cover construction methods. These activities would be undertaken under statutory undertaker permitted development rights, with appropriate highway licencing, traffic management and implementation of best practice construction methods. This is acceptable.

There are very few residential receptors on the proposed cabling route, except for receptors in Bonhams Lane, ~25 m west of the A31 northbound carriageway. Receptors on Mill Lane are of lower sensitivity within an industrial park with some out of town retail units.

No consideration is made of the potential for emissions from construction plant (NRMM) or decommissioning. NRMM can be dealt with through measures in the CEMP, including a preference for low emission / battery / electric equipment and appropriate placement of any fixed exhausts (free flow of exhaust, placed away from

sensitive property). Decommissioning impacts are typically assessed as similar to or less than that for construction.

3.5.2. Traffic emissions

Screening criteria for assessment of vehicle emissions are presented in paragraph 8.2.2 (page 8-7) of the ES, referencing Table 6.2 of the IAQM Planning Guidance (2017). The use of IAQM guidance is acceptable for land developments.

Traffic emissions associated with construction and operation of the proposed facility are presented in paragraphs 8.4.14 and 8.4.16 of the ES respectively. This refers to data presented in the Transport Assessment (TA) submitted with the planning application. The TA study area is confined to the A31 and does not consider any additional traffic on other roads. It is unclear if this is because the HGVs will not use other local roads or if it has simply focused on the highest flow. **Further clarification of the routes for new HGV movements beyond the A31 is required.**

The assessment compares both construction and operational traffic flows with those currently associated with the existing MRF operations at the site. Peak construction HGV flows will be +128 (two way), less than the existing HGV flow and for a short period only, thus have not been assessed. This is in accordance with common practice as it is often the operational impact that is of greater relevance.

The assessment of operational traffic flows (+96 daily HGV two way) considers only the net change in vehicle trips due to the facility, above existing flows. This approach is acceptable for change of use of an existing site.

The net change figures for operation fall below the IAQM's indicative criteria for further assessment for affected routes now outside an AQMA. The conclusion that the construction and operational transport emissions, from the scheme alone on the considered section of the A31, are of negligible significance, is valid.

No consideration has been made of the potential for the more stringent criterion to apply, e.g. for changes within an AQMA, such as in Farnham. Further information is required to exclude this potential impact on the wider affected network.

Additional comments on the need for an assessment of in-combination effects of traffic emissions are provided under the sub-headings for stack emissions and ecological impacts.

3.5.3. Operational odour and fugitive dust emissions

The assessment of potential odour effects from the proposed facility has been made in accordance with IAQM Odour Guidance (2018). This is an appropriate choice of methodology.

Mitigation measures inherent in the facility design are presented in paragraph 8.4.3 and 8.4.4 of the ES. They include fast acting roller shutter doors and negative pressure within the building. The appraisal of source – pathway – receptor is valid, as is the conclusion of negligible odour risk at sensitive receptors.

The IAQM Construction Dust Methodology (2014) has been employed to determine the magnitude of dust emissions from the operational facility and sensitivity of the area. The conclusion of no significant effect due to operational dust emissions is valid.

3.5.4. Stack emissions

This review considers whether the assessment of AAERF stack emissions has been undertaken in accordance with accepted good practice, including Environment Agency online permitting guidance, such that HCC can be confident the site would be awarded an environmental permit to operate and that the facility will perform in line with the Industrial Emissions Directive (IED). It also considers the potential for in-combination impacts with other elements of the scheme, and other surrounding developments.

The proposals are for a 40 tonne/hour (330 ktpa) energy recovery facility for residual waste are described in the ES Chapter 4. It is a twin line facility, feeding two steam boilers which provide high pressure steam a gas turbine. It will export electricity and heat. It has a moving grate to ensure uniform heat release. Pollution will be minimised using best available techniques as defined in the EU BREF Note for Incineration (2019) i.e. SNCR urea injection (removal of NOx), flue gas scrubbing with activated carbon injection (removal of metals, dioxins and furans), dry scrubbing with lime (removal of acid gases) and use of fabric filters (removal of particulates). It will employ air cooled condensers (ACC) to cool the low pressure steam to condense within a closed system. This means there are no emissions to atmosphere or any visible water vapour plume from the cooling system.

Appendix 8.3 describes the detailed dispersion modelling study that has been undertaken to determine how ground level concentrations at sensitive receptors have been derived. The Applicant has used an appropriate model (ADMS v5.2) which is accepted by the EA for similar permit applications.

The Applicant has applied standard good practice in the use of five years of meteorological data and incorporation of Ordnance Survey terrain data. The rural surface roughness (0.3 m) used is acceptable and the inclusion of buildings in model (main building height 39.9 m) is appropriate.

Furthermore, reasonable conservative assumptions have been applied throughout the assessment in line with common practice for such assessments:

- Continuous operation every day, 24/7 through the year;
- Use of highest end of pollutant concentration range in BREF alternative emission levels (AEL) – in some cases this may be more than double what is achievable by the proposed facility;
- Total particulate matter assessed both as PM₁₀ and PM_{2.5};
- Total VOCs assessed both as benzene and 1,3-butadiene;
- Use of 30 minute ELVs to assess against hourly short-term AQ criteria;
- Consideration of nearest sensitive receptors;
- Conversion of NO_x to NO₂ using EA's recommended "worse case" [sic] 70/35% ratios;
- Future baseline ambient pollutant concentrations held at existing levels, generally considered a conservative approach given current policy.

The following areas for improvements in the assessment approach have been identified, although it is not expected that these would materially change the Applicant's findings, with which Atkins concurs:

- Modelling used a relatively coarse receptor grid (90 m x 90 m) resolution around the site (Section 4.4.1); no justification was given for the selection, but with an 80 m stack height and several kilometres to point of maximum impact, this is acceptable;
- No assessment of future developments that could introduce new sensitive receptors (Section 3.1); however, there is good coverage of existing receptors and the maximum point of ground level concentration demonstrates no significant impact (Table 17);
- No short term receptors specifically selected for assessment, such as footpaths, amenity space, including in light of potential future development (Section 3.1); however, the maximum ground level concentrations suggest this is not an issue (Table 18);
- No assessment of diesel fired auxiliary burner emissions; their use would be limited to 60 hours/year by the IED and it is agreed that it is unlikely to affect modelled concentrations from concurrent normal operation, which assumes 24/7 running and for short-term exposure has considered 30 minute ELVs rather than the daily average (Table 10).

3.5.4.1. Stack height

A stack height sensitivity study has been carried out (Section 5.1) which show that there are minimal building downwash effects at all the stack heights evaluated. There is no clear step change in the angle of the slope of the graphs of concentrations (presented as percentiles of modelled hours) against stack height. **The stack height sensitivity study should have been based on the maximum hourly mean for NO₂, not a percentile value, as this could mask any evidence of building downwash effects on the plume.**

This information should be requested from the Applicant. However, by excluding buildings from the model in a separate sensitivity test the Applicant showed little difference in maximum hourly NO₂ concentration so there is unlikely to be any significant impact on the conclusions.

3.5.4.2. Human health risk assessment

A human health risk assessment (HHRA) is presented in Appendix 8.4. The Applicant has made appropriate use of IRAP-h software, which enacts the US EPA HHRA protocol addressing food chain exposure pathways for dioxins and dioxin-like PCBs. The selection of relevant pathways and exclusion of others is appropriate (Section 5.1 and 5.2). A reasonable justification is provided for excluding intake via fish (Section 5.2.4).

The Applicant should justify why the HHRA considered dioxins/PCBs only and did not include metals, which are also subject to bioaccumulation and may act similarly to gaseous emissions.

The use of a 30 year facility lifetime is appropriate as are other parameters such as meteorological conditions (for a local station) and the ratio of dry to wet deposition rate (taken from EA methodology).

The Applicant has carried out a conservative assessment, which considers both the closest residential and agricultural receptors as well as the point of maximum impact (Section 6, Table 3). The Applicant has assumed that all receptors eat only locally grown produce, and for agricultural receptors, that the animals are reared at those locations and eat locally produced feed. This will tend to overestimate total intakes and is a commonly applied approach.

The assessment is already based on the AAERF emitting dioxin continuously at 0.04 ng/Nm³ – this is close to the upper value in the BREF AEL range, whereas <0.01 ng/Nm³ may well be achieved by a new facility.

The assessment would have been even more conservative if based on all dioxin emitted as 2,3,7,8-TCDD, the most toxic congener. **Applicant to present a sensitivity test for dioxin using assumption that all dioxin is emitted as 2,3,7,8-TCDD**, but using a more representative background concentration for the location of maximum impact.

The highest measured background dioxin and PCB concentrations were used as a baseline. These are for sites in London (Appendix 8.1, Section 1.5.6), whereas a lower concentration may be expected in the local area. Although this overshadows the impact of the facility when comparing the two as a percentage of the WHO tolerable daily intake (TDI) of 2 pg/kg-bw/day (Table 8), the findings are deemed to be robust as the total intake including the facility contribution at point of maximum impact still does not exceed the appropriate TDI.

3.5.5. Ecological impacts

The approach to assessment has followed the Environment Agency and IAQM (2019) guidance on the assessment of air quality impacts on designated nature conservation sites, including the correct use of deposition velocities as documented in the IAQM guidance. Critical levels for the protection of ecological receptors are presented in Table 8.3 of the ES. Significance criteria for the assessment of effects on ecological receptors are presented from paragraph 8.2.22 of the ES (page 8-12).

HCC have specifically requested that the ES considers potential effects of the proposed facility on BAP Priority Habitats. This has been done, as identified on Figure 8.4. Potential effects are discussed at paragraphs 8.4.42 to 8.4.46 of the ES, concluding that the effect on locally designated sites and priority habitats is ‘not significant’.

An appropriate method as taken from AQTAG guidance has been used to estimate nitrogen and acid deposition with a conservative approach of including HCl in the estimate of sulphur deposition.

The assessment of stack emissions found that at Shortheath Common SAC, where the critical loads for nitrogen and acid deposition are already exceeded, the modelling indicates additional small exceedance of 1% of the acid deposition critical load for bog woodland. This was the case for only one of the five modelled years. The facility contribution is a very small fraction of the existing rate of deposition which is based on the site being classified as woodland (if grassland, the PC and existing background are approximately half).

Although the stack emissions contribute only marginally over 1% at one location where the critical load is exceeded, and that contribution is only a very small fraction of background, a step is missing in terms of EIA and in-combination impacts with traffic. Such impacts are not addressed within the air quality chapter as traffic emissions have themselves been scoped out as below a threshold. They are discussed at a high level in Appendix 6.6 (Information to Inform the HRA) but without any quantitative assessment, this may be challenged, even though the likelihood of a materially different result and thus conclusion being reached is very low.

The Applicant has stated in Appendix 6.6 to the ES (Information to Inform the HRA) that because uncertainties remain with regard to likelihood of significant effects on bog woodland at Shortheath SAC, further assessment has been carried out. The information presented is intended to inform HCC’s HRA.

The Applicant has made reference to the conservation objective for the SAC and has concluded that the small contribution from the facility is unlikely to affect the objective to achieve the critical levels and loads. This is a reasonable conclusion, as the background alone contributes over 300% to the acid deposition critical load. It is also worth noting that the APIS critical load function (CLF) tool used to evaluate acid deposition only considers the deposition rate to 2 decimal places, thus the lowest value that can be calculated is 0.01 keq/ha/yr. The facility contribution is 0.005 keq/ha/yr which rounds up to 0.01 keq/ha/yr, or 1.5%. Thus, an almost trebling of the modelled facility contribution (e.g. to account for in-combination effects) would give the same answer.

3.5.6. Mitigation

Section 8.6 of the ES presents recommendations for mitigation. Suggested mitigation measures for control of construction dust emissions, suitable for a low risk site, are presented with the recommendation that site-specific measures will be identified by the appointed contractor and agreed in advance with the Local Authority. This requirement could be made by planning condition.

Operational mitigation is inherent in the facility design, as described from paragraph 8.4.1 of the ES, recognising that operational emissions will be subject to control under EA permitting. The stack height of 80 m is also an integral part of facility design and should not be considered as mitigation.

Paragraph 8.4.3 of the ES describes a number of standard, and effective controls to minimise the release of operational odours.

Natural England have commented in their consultation response (see Section 5.4) on the potential for a likely significant effect at Shortheath SAC in light of uncertainty (assuming this is regarding future trends) and has suggested mitigation (as a financial contribution) is required.

In their evaluation of future trends in air quality in Appendix 6.6, the Applicant has focused only on the potential reduction in SO₂ concentrations and appears not to have considered the fact that nitrogen species also contribute to total acid deposition. The NO_x and NH₃ contribution to acid deposition is 0.0028 keq/ha/yr, the same as SO₂ (the remainder is from HCl) although it is recognised that the sulphur critical load element is more stringent thus SO₂ is relatively more important to the CLF. **The Applicant could enhance their consideration of trends by expanding to other pollutants.**

It is worth noting that the Applicant chose to use the upper end of the BREF AEL range when selecting pollution emission rates. In the case of NO_x and NH₃ in particular, this will have contributed to a conservative assessment. The conservative assumptions built into the assessment of stack emissions is likely to cover any residual uncertainty in terms of future trends.

Nevertheless, **the matter of in-combination impacts may require further evidence from the Applicant**, to explicitly address the potential contribution from vehicle emissions, in line with HRA guidance from Natural England (NB. this guidance does not address point sources).

4. Climatic impacts

4.1. Review of Environmental Statement

4.1.1. Impact of the project on climate

4.1.1.1. Overview

The impact of the project on climate is presented in paragraphs 4.8.3 – 4.8.14, and supported by a carbon assessment in Appendix 4.3. The assessment is based on a comparison between operational greenhouse gas (GHG) emissions from the project and those of an alternative scenario in which waste is sent to landfill and electricity is generated by a combined cycle gas turbine (CCGT) plant. The policy background referenced is the 'Energy from Waste – A Guide to the Debate' which notes that energy from waste plants typically lead to fewer GHG emissions than landfill. The carbon assessment in Appendix 4.3 goes on to demonstrate the project would produce lower GHG emissions in operation than the alternate 'baseline' scenario.

However, no assessment of the significance of any impact is presented, nor any consideration of UK or local policy on climate change. For example, the assessment does not consider how the development might impact the achievement of the UK's carbon budgets and Net Zero target, or Local Authorities' climate emergency declarations. No mitigation measures to reduce climate impacts in operation are described.

The baseline scenario does not take into consideration carbon reductions which are likely to occur during the lifetime of the project and how the project might impact them, for example increased zero carbon electricity generation and a move towards a circular economy.

4.1.1.2. Baseline

The baseline against which the assessment is made is an alternative scenario in which waste is sent to landfill and electricity is generated by CCGT. The GHG Protocol for Project Accounting¹ agrees that the baseline scenario for a project can be 'a hypothetical description of what would most likely occurred' without the project.

¹ https://ghgprotocol.org/sites/default/files/standards/ghg_project_accounting.pdf

However, IEMA's best practice EIA guidance² also notes that the future baseline should be set to include anticipated future changes, for example 'UK grid decarbonisation projection scenarios or the adoption of renewables'.

As the assessment of impact rests wholly on the comparison of the project to this baseline, it is crucial that the baseline is fully justified and representative of the current and future scenario for the lifetime of the development. The assessment does not justify the use of the landfill baseline, which could be considered a 'worst case' future scenario, based on the waste hierarchy. Justification could have been provided by presenting the current fate of wastes, regional waste policy, and national recycling and circular economy targets to help set a future baseline. This would need to demonstrate that throughout the development's operational life, landfill is the most likely alternative for all the feedstock.

For the electricity generation aspect of the development, a range of grid displacement factors are included in a sensitivity test, comparing a CCGT comparator with a long run marginal factor for 2023 (the year of completion). As the development will be operational through to the 2050s, it would have been appropriate to consider likely grid decarbonisation scenarios across that timeframe and consider the impact of the project in the context of these.

4.1.1.3. Impact assessment

No assessment of the significance of the impact is presented, and no methodology to determine this is suggested.

The assessment does not consider UK, regional or local climate change policy, for example the 2019 Climate Change Act amendment or local Climate Emergency declarations. It would have been beneficial to have considered the proposal in the context of the UK's carbon budgets and overall Net Zero target, as well as the effect on any local carbon reduction roadmaps and Net Zero ambitions it would impact.

This means that while the assessment shows a carbon saving against a landfill option, it does not consider the fact that the facility will be generating GHG emissions in 2030 when Waverly Borough Council aims to be carbon neutral, and in 2050 when the UK must legally reach Net Zero Carbon.

4.1.1.4. Mitigation

Some high-level potential mitigation measures are proposed to reduce GHG emissions in the construction stage (which has been scoped out of the assessment) in 4.8.14. These include efficient design to reduce materials requires, and the specification of low carbon materials. No mitigation measures are set out for reducing GHG emissions from the operational phase, which are anticipated by the applicant to contribute >99% of total project emissions. It is not apparent how the Applicant plans to reduce emissions associated with transport, combustion, and other operational processes.

4.1.2. Vulnerability of the project to climate change

4.1.2.1. Overview

The proposed development's vulnerability to climate change is discussion in paragraphs 4.8.15 to 4.8.22. Whilst the section covers some of the main issues, the assessment does not follow an established assessment methodology, and is lacking detail in terms of the baseline, receptors and potential impacts. There is no assessment of significance or description of residual impacts. The structure of the section does not make clear the links between potential impacts, their receptors and mitigation. Some potential impacts have not been considered.

4.1.2.2. Baseline

A high-level baseline (projected climate) is presented in paragraph 4.8.15. This is taken at a national level and is qualitative. It would be preferable to use UKCP18 data specific to the catchment or administrative area within which the proposed development is located, to give a better guide determination of potential impacts and mitigation. Quantification of the trends being referenced would also strengthen the baseline.

² Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance

https://www.iaia.org/pdf/wab/EIA%20Guide_GHG%20Assessment%20and%20Significance_IEMA_16May17.pdf

The baseline should also reference the current climate, based on historical observations from sources such as:

- nearby long running meteorological stations;
- Met Office UK regional climate definitions; or
- Met Office regional 30 year average datasets.

The design life is stated to be 30 years, and the projected baseline should align to this. Currently, paragraph 4.8.15 mentions predictions that run up to 2080, but UKCP18 provides shorter term projections which should be what is used here. It is not made clear what emissions scenario has been used for future projections. To be conservative, it is suggested that RCP 8.5 is used if more detailed climate projection data is used.

4.1.2.3. Impact assessment

No assessment methodology is presented which sets out how the project's vulnerability to climate change has been considered. Individual potential impacts and receptors are not clearly and comprehensively defined, and no significance assessment is carried out.

Paragraph 4.8.16 appears to be a high-level scoping summary, in that it notes that sea level rise and river flooding are not relevant to the project, and implies that only 'increased rainfall' needs to be scoped in. However, the paragraph doesn't consider all future weather trends meaning it is not clear why some issues are not considered as part of the assessment.

4.1.2.4. Pluvial flood risk

Pluvial flood risk, mentioned in paragraphs 4.8.17-18, is important and needs more consideration. The size of the design storm used for the development of the drainage design is stated, but it is not justified. Neither is the climate change allowance that is used. In addition, the conclusions here have not been linked to the current baseline or future rainfall projections. There is no reference made to any flood risk assessments carried out. The statement that 40% allowance is considered to be 'robust to increases in rainfall intensity' (4.8.18) should be justified, even if this is just be way of alignment with policy.

4.1.2.5. Water resources

Section 4.8.19 rightly notes that it is important for the development to reduce water usage to limit impact on future strained water resources. However, there is no assessment of how water shortages caused by increased periods of drought would impact the operation of the plant.

4.1.2.6. Further impacts

Potential impacts which have not been considered but which may be important include:

- changes to raw material / feedstock availability and/or demand with climate change, for example if storms prevented the site from being accessed by heavy vehicles;
- how climate change is expected to affect electricity demand and supply;
- how climate change is expected to affect heat demand – warmer winters will reduce demand, therefore climate change may therefore reduce the potential number of heat customers;
- impacts of extreme heat events in hotter summers, for example on feedstock or construction materials. The living wall may provide some mitigation. However, it is not noted that this would be the case or what aspect it is on;
- whether future soil stability may be an issue on embankments (or confirmation that there are no embankments);
- impacts affecting environmental receptors – for example, are any of the impacts identified elsewhere in the ES intensified by climate change;
- whether the grid connection is resilient to more extreme weather, for example more intense storms with higher winds; and
- how extreme weather may impact construction processes, for example fog, lightning, or high winds.

5. Statutory Consultee Responses

5.1. Hampshire County Council, Public Health

Health Protection Principal Public Health, Adults' Health and Care Hampshire County Council.

Comments relating to the issues raised in the e-mail dated 28 August 2020 from Darren Carmichael, are as reviewed below.

| Topic | Relevant Paragraph | Review Comments |
|--------------|--|---|
| Observations | <p>The applicant should have regard to:</p> <ul style="list-style-type: none"> The requirements of all the relevant Local Authority Environmental Health departments regarding statutory nuisance which may arise during demolition & construction or use of the site... | <p>The ES Chapter 8 Introduction states: "impacts from fugitive emissions of dust during the construction phase, the emissions from traffic associated with the import and export of materials during the construction and operational phases, and potential fugitive emissions of dust and odour during operational phase of all of the components of the Proposed Development have also been assessed." It also refers to Appendix 8.2 Construction Phase Dust Assessment Methodology. The dust assessment is based on the 2014 IAQM guidance document, which is the appropriate methodology.</p> <p>ES Paragraph 8.2 states "The Environmental Permit would include conditions to prevent fugitive emissions of dust and odour beyond the boundary of the installation."</p> <p>ES Paragraph 8.2.6 describes the assessment of fugitive odour emissions, in line with the 2018 IAQM guidance document, which is the appropriate methodology,</p> <p>It is concluded in ES Paragraph 8.4.12, that "the Site has been assessed to be of low risk for dust soiling and human health effects associated with earthworks and construction activities. In accordance with the IAQM assessment methodology, the risk category of the Site is used to define suitable mitigation measures to minimise the risk which would be implemented via the Construction Environmental Management Plan (CEMP). Potential mitigation measures are detailed in the mitigation section of this chapter. With the implementation of these mitigation measures the residual risk is not expected to be significant."</p> <p>It is concluded in ES Paragraph 8.4.53, that "the likely magnitude of odour effect at the properties identified within 500 m of the Site boundary is deemed to be 'negligible'".</p> <p>The potential for vehicle emissions alone to affect air quality has been assessed in accordance with IAQM (2017) guidance. Atkins agree that clarification is needed over</p> |
| | <ul style="list-style-type: none"> The requirements of all the relevant Local Authority Environmental Health | |

departments regarding **assessment and emissions, where appropriate** for any added air quality impacts which will compound vehicle emissions.

the future affected road network, in-combination effects with stack emissions and other future developments along the A31.

5.2. Public Health England

Centre for Radiation, Chemical and Environmental Hazards (CRCE), Public Health England.

Comments relating to the issues raised in the letter dated 18th September 2020 from Dr James Isaac, Environmental Public Health Scientist, are as follows:

| Topic | Relevant Paragraph | Review Comments |
|--------------------|--|-----------------|
| Air quality | PHE is satisfied that the applicant has used a dispersion model and assessment criteria that are in line with UK guidance and good practice and has identified appropriate sensitive receptors. | Noted |
| HHRA | PHE is satisfied that the approach taken in the HHRA is appropriate, based on well recognised assessment models, and the operator has adopted conservative but not over-precautionary approaches to assessing the potential risks. | Noted |
| Fugitive emissions | PHE is satisfied that the human health impact from dust and odour has been assessed in accordance with IAQM guidance and is considered to be low. PHE note that the operation of the ERF will be subject to an Environmental Permit, the conditions of which would ensure that there are no fugitive emissions of dust and odour beyond the site boundary. | Noted |
| Conclusion | <p>PHE's position statement on the impacts on health of emissions to air from municipal waste incinerators concluded any effects on health, 'if they exist, are likely to be very small and not detectable'.</p> <p>PHE is satisfied that the applicant has approached the Environmental Impact Assessment (EIA) in a manner consistent with the UK requirements.</p> <p>PHE will be consulted as part of the Environmental Permitting process and will make additional comments at that time.</p> | Noted |

5.3. Environment Agency

Planning Advisor, Environment Agency

Comments relating to the issues raised in the e-mail dated 8th August 2020 from Miss Suz Greenwood, are as follows:

| Topic | Relevant Paragraph | Review Comments |
|---|---|-----------------|
| Environment Agency Position | <p>The Environment Agency has no objection to the proposed development as submitted.</p> <p>Please note that this response relates solely to matters that are relevant to the Environment Agency's planning remit. This response does not represent endorsement or opposition to the proposed development as submitted nor does it guarantee that any new or variation to an existing permit will be granted.</p> | Noted |
| Scope of controls for waste incineration facilities | <p>We will consider the following areas of potential harm when assessing the permit:</p> <ul style="list-style-type: none"> • Management - including accident management, energy efficiency, efficient use of raw materials and avoidance, recovery and disposal of wastes • Operations - including incoming waste and raw material management, waste charging, furnace types and requirements, validation of combustion conditions, combined incineration, flue gas recirculation, dump stacks and bypasses, cooling systems and boiler design • Emissions - to surface water, sewer and air, odour, noise and vibration, monitoring and reporting of emissions | Noted |

5.4. Natural England

Sustainable Development Lead Adviser, Thames & Solent Area Team

Comments relating to the issues raised in the e-mail dated 27th August 2020 from Rachael Clemson, are as follows:

| Topic | Relevant Paragraph | Review Comments |
|-------------------------------------|---|---|
| Summary of Natural England's advice | <p>Natural England requires further information in order to determine the significance of these impacts and the scope for mitigation.</p> <p>The following information is required:</p> <ul style="list-style-type: none"> • Habitats Regulations Assessment | It is understood HCC are separately preparing an HRA. |

| | | |
|----------------------|--|--|
| | Without this information, Natural England may need to object to the proposal. | |
| Air Quality | <p>The application is supported by an Ecological Assessment of Air Quality Impacts (Argus Ecology) which concludes there is no likelihood of significant effects from the proposal upon Shortheath Common SAC and Bentley Station Meadow SSSI. The results of modelling indicate a small exceedance of the critical load for acid deposition on Shortheath Common SAC and a small exceedance of the critical load for nitrogen and acid deposition on Bentley Station Meadow SSSI.</p> <p>However existing background levels at both of the sites already exceed the critical load therefore uncertainties remain. On the basis of information provided, Natural England advises that there is currently not enough information to rule out the likelihood of significant effects.</p> <p>Natural England advises the air quality issue should be examined within the appropriate assessment and that the existing conservation status of the sites be considered. Natural England's advice is to take a precautionary approach that recognises the uncertainty.</p> | <p>The contribution of stack emissions to acid deposition at Shortheath Common SAC marginally exceeds 1% of the lowest critical load for bog woodland of 5 kg/ha/yr. To put that in context, the existing background deposition is over 25 kg/ha/yr or more than 500% of the critical load compared to the facility contribution of 0.05 kg/ha/yr.</p> <p>It is unclear what the uncertainty is that Natural England wish to see addressed and therefore what further information the Applicant needs to provide. The Applicant has used robust and conservative assumptions for the air quality assessment. i.e. emissions at IED limits, 24/7 throughout the year with no assumed improvement in baseline in future years. The uncertainty may therefore relate to ecological survey findings or the current understanding of impacts of acid deposition at the designated site. [to be discussed further with HCC]</p> <p>Notably, Natural England have not raised the matter of in-combination effects at this or any other sites (re. issues raised in NoWey response).</p> |
| Mitigation | <p>Natural England advises that securing mitigation measures will ensure the uncertainty is fully addressed and that development does not add to existing burdens from acid and nitrogen deposition. Mitigation could be delivered through a contribution to Hampshire County Council Countryside Service for the potential increased management costs of Shortheath Common SAC and to Butterfly Conservation for the management of Bentley Station Meadow SSSI.</p> <p>Provided the appropriate financial contributions are secured, Natural England is satisfied that the proposal will mitigate against the potential impacts from air pollution on the sites in question.</p> | See Section 3.5.6 of this review where this is discussed. |
| Construction Impacts | Natural England advises a Construction Environmental Management Plan (CEMP) should be submitted to and approved in writing by the county ecologist that identifies the steps and procedures that will be implemented to avoid or mitigate constructional impacts on species and | ES Paragraph 8.4.12 refers to the assessment of dust soiling and the risk category of the Site thus established being used " <i>to define suitable mitigation measures to minimise the risk which would be implemented via the Construction Environmental Management Plan (CEMP). Potential mitigation measures</i> |

habitats. The CEMP should address the following impacts:

- Storage of construction materials/chemicals and equipment;
- Dust suppression...

are detailed in the mitigation section of this chapter. With the implementation of these mitigation measures the residual risk is not expected to be significant.”

5.5. Surrey County Council

Planning Group, Surrey County Council

Comments relating to the issues raised in the letter dated 28 July 2020 from Stephen Jenkins, Interim Planning Development Manager, are as follows:

| Topic | Relevant Paragraph | Review Comments |
|-------------|--|---|
| Air quality | <p>... the ERF will have to comply with stringent emissions standards set by EU directives for the protection of health and the environment. The applicant has assessed the potential air quality impacts from the proposed thermal treatment of waste through detailed dispersion modelling using best practice approaches. The results of dispersion modelling indicate that predicted contributions and resultant environmental concentrations of all pollutants considered are of “negligible” significance.</p> <p>The applicant will need to obtain an Environmental Permit from the Environment Agency (EA) who are the body responsible for regulating the ERF. This will contain specific limits for emission from the ERF in order to ensure a high level of protection is provided for the environment and human health. Emissions will need to be monitored and monitoring data are reviewed by the EA to ensure compliance with the Environmental Permit. These regulatory requirements will therefore ensure that the proposed ERF will not have an adverse impact on human health or the environment in Surrey...</p> | <p>Noted and in alignment with the response from PHE.</p> <p>Atkins agrees with this position.</p> |
| | <p>The applicant has stated that as the change in HGV flows does not exceed the IAQM criteria (<100), <i>‘the development is not expected to cause a significant change and the significance of the effect is deemed to be ‘negligible’ and further detailed analysis will not be carried out’</i>. However, it is not clear whether there has been a full assessment of emissions from HGVs that may pass through or adjacent to the Farnham AQMA, therefore it is</p> | <p>Agreed, this is an appropriate condition to limit facility traffic in congested areas where there are a number of sensitive receptors for air quality.</p> <p>The Traffic Assessment indicates that additional HGVs would use the A31. Further comments on this are provided in Section 3.5.2.</p> |

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| | imperative that routing is controlled, as detailed below under Highways response | Any condition would need to be applied to additional generated HGV movements as this is an existing facility |
| Conclusion | SCC considers that subject to the further information on traffic and a robust HGV routing plan covering both the construction and development phases, the proposal would not cause any significant adverse impacts on county of Surrey. | Noted conclusion that “ no adverse impacts on county of Surrey ”. Atkins concur with this conclusion. See comments in Section 3.5.2 regarding clarification of HGV routing beyond the A31 and impacts on wider network. |

5.6. East Hampshire District Council

Case Officer, East Hants DC

Comments relating to the issues raised in the letter dated 21 August 2020 from Nick Upton, Case Officer, are as follows:

| Topic | Relevant Paragraph | Review Comments |
|---|---|---|
| Accordance with East Hampshire’s Climate Strategy 2020-2025 | <p>The two main objectives of the Climate Strategy are to reduce carbon emissions to net-zero by 2050, in line with the government commitment, and to protect and enhance the local natural environment. The proposed development runs contrary to these goals.</p> <p>In addition, the burning of waste contributes towards the unwanted effects of climate change because rather than being climate neutral, incineration actually emits substantial amounts of carbon dioxide. Therefore, the amount of hazardous emissions needs to be controlled to avoid vast amounts of pollutants that could contaminate air, soil and water...</p> | <p>The assessment does not consider the impact of the project on national or local climate policy. GHG emissions will be generated by the development in 2050 when East Hampshire – and the UK Government – seeks to be net zero. However, the applicant does not comment on how this might affect net zero efforts.</p> <p>The separate Pollution Control regime will require the plant to be permitted by the Environment Agency. The Agency will ensure that potentially hazardous emissions are prevented or minimised to acceptable limits, as set out in the IED. Emission concentration limits for specific substances will be specified in the permit, and the operator is obliged to demonstrate compliance. See ES Chapter 4, paras 4.3.37. The abated emissions form the basis of the environmental impact assessment as described in the Environmental Statement.</p> |
| Emissions | Concerns are raised over the impact of emissions on human health. Nearby settlements have a combined population in excess of 130,000 people, who will be subjected to additional nitrogen and sulphur oxides contained within the exhaust plume of the facility. | <p>The Environment Agency permitting process will ensure that all the necessary pollution abatement measures are incorporated in the plant design, and that residual pollutant emissions are within acceptable limits. Acid gases are abated and regulated. See ES Chapter 4, paras 4.3.25 to 4.3.28.</p> <p>The emissions from such operations are regulated under the parallel permitting regime and as such are not material planning considerations. The planning authority must assume the permitting regime operates</p> |

| | | |
|-------------------|---|---|
| | | <p>effectively and adequately controls potential emissions.</p> <p>Baseline conditions for NO₂ and SO₂ in the local area are good and the contribution from stack emissions is not significant.</p> <p>The stack height of 80m ensures adequate dispersion in the atmosphere and therefore concentrations decrease rapidly with increasing distance from the area of maximum ground level concentrations.</p> |
| Dioxins | <p>Of concern is the possibility of emitting dioxins, which can result from the incineration of plastics, and which are toxic even in small concentrations.</p> | <p>Dioxins were an issue several decades ago prior to the introduction of stringent EU directives controlling such emissions to several orders of magnitude below that of unabated plant. Dioxins are prevented from formation by design features, including the high temperatures and flue gas residence times in the combustion chamber, and by the subsequent rapid quenching of these gases to lower temperatures where such compounds may not be formed. The process is controlled by automated temperature interlocks to ensure the appropriate residence time at a minimum of 850°C, as stipulated in the Directive. Further reduction of any traces of such compound is achieved by injection of powdered activated carbon adsorbent, which is removed from the flue gas by bag filtration. See ES Chapter 4, paras 4.3.29 to 4.3.34.</p> <p>An HHRAP has been carried out by the Applicant using an appropriate and internationally recognised method and with conservative assumptions i.e. operation 24/7 at the upper range of the BREF note AELs (a lower figure is likely to be achieved) and considering.</p> <p>Atkins and PHE are satisfied with the Applicant's assessment, and both Atkins and PHE concur with the conclusion.</p> |
| Facility lifetime | <p>The development claims to be 'better than landfill' in terms of greenhouse gas emissions. Although the developer has provided evidence for this, the evidence looks only at the proposed year of opening in 2023. If a longer-term whole lifetime comparison of the development's greenhouse emissions over its proposed 25-year life is undertaken, then then it is</p> | <p>The assertion that EfW is 'better than landfill' comes from the government policy document 'Energy from Waste – A Guide to the Debate' and is founded on research. However, it is true that the applicant considers operational conditions only to 2023. IEMA's best practice EIA guidance³ also notes that the future baseline should be set to include anticipated future changes over the lifetime of the scheme. This might include changes in waste</p> |

³ Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance
https://www.iaia.org/pdf/wab/EIA%20Guide_GHG%20Assessment%20and%20Significance_IEMA_16May17.pdf

doubtful as to whether the development will indeed be better than landfill.

management practices, and UK Grid decarbonisation.

The HHRAP considers a facility lifetime of 30 years which is standard practice for health risk assessment but may not reflect the true expected facility lifetime. Application to clarify as this will impact whether the scheme is operational in 2050.

Pollution Team, East Hants DC

Comments relating to the issues raised in the letter dated 6th August 2020 from Charlotte Adcock, Pollution Team Leader, are as follows:

| Topic | Relevant Paragraph | Review Comments |
|--------------------|---|---|
| Initial paragraphs | <p>No adverse comments to make.</p> <p>The following conditions are recommended to be applied to any consent that is granted:</p> <p><i>No development shall commence, including any works of demolition, until a Construction Environmental Management Plan has been submitted to, and approved in writing by, the Planning Authority. The Plan shall provide for:</i></p> <p><i>a. An indicative programme for carrying out of the works</i></p> <p><i>b. The arrangements for public consultation and liaison during the construction works</i></p> <p><i>i. Wheel washing facilities</i></p> <p><i>j. Measures to control the emission of dust and dirt during construction</i></p> | <p>The proposed conditions quoted here are consistent with IAQM good practice recommendations for the protection of air quality during construction, and are therefore supported.</p> |

5.7. Hart District Council

No objection to the proposal raised in the e-mail dated 13 July 2020 from Mark Jaggard, Head of Place, Hart District Council.

5.8. Waverley Borough Council

Comments relating to the issues raised in the letter dated 14 August 2020 from John Ward, Leader of Council and Steve Williams, Portfolio Holder, Environment and Sustainability, are as follows:

| Topic | Relevant Paragraph | Review Comments |
|---------------------------|--|---|
| 2 nd paragraph | The Council objects in principle to the development of the Energy Recovery Facility because it will increase air pollution and contribute to global warming. | Noted. |
| <u>Objection 1</u> | “Long term health conditions are known to be an issue near incinerators...” | This is inconsistent with PHE’s position statement and their conclusion. The WBC comment does not reflect the findings from modern energy recovery facilities that meet stringent design standards. The operational plant emissions have been assessed using appropriate methods and conservative assumptions. The results have been compared to relevant health related criteria in the ES and the results of dispersion modelling indicate that the facility contributions and resultant environmental concentrations of all pollutants considered are of “negligible” significance. |
| <u>Objection 2:</u> | “The carbon dioxide emissions caused by burning waste is directly contrary to the Council’s aims for achieving carbon neutrality by 2030.” | The assessment does not consider the impact of the project on national or local climate policy. However, the assessment does show that GHG emissions will be generated by the project after 2030 and therefore does not support WBC’s ambition to achieve carbon neutrality in the borough by 2030. |
| <u>Objection 5:</u> | Concern expressed regarding operational traffic increase on local roads. Also effect of vehicular emissions on Farnham and Godalming AQMAs. | Impacts of traffic have been screened out for effects outside AQMAs. Traffic assessment does not suggest additional HGV traffic uses roads other than the A31. Applicant to provide further information (see Atkins review comments in section 3.5.2) |
| <u>Objection 6:</u> | Concern expressed regarding ecological sites including SPAs. | An assessment of ecological sites including SPAs is provided by the Applicant. Natural England has commented on the impact in their response, which is limited to consideration of deposition at two sites. They are satisfied that a financial contribution to habitat management would be appropriate. Atkins notes the incremental impact due to the facility at this site is 500 times lower than the existing rate of nitrogen deposition at bog woodland (0.05 vs 25 kg/ha/yr). |

5.9. Local Parish Councils

Comments relating to issues raised by representatives from Beech PC⁴, Bentley PC⁵, Binsted PC⁶, Upton Grey PC⁷ and Wield PC⁸ are collated below.

| Topic | Relevant Paragraph | Review Comments |
|---------------------------|--|--|
| Air pollution | Parish councils have expressed concern regarding the potential for emissions from the proposed development to have adverse impacts on the health and wellbeing of local residents. | <p>This is inconsistent with PHE's position statement regarding modern energy from waste plants in general and with their conclusion regarding this specific application. The comments from the parish councils do not reflect the findings from modern energy recovery facilities that meet stringent design standards. The plant will operate using advanced technology and CEMS to continuously monitor emissions. The stack height has been determined using a suitable method to ensure efficient dispersion of pollutants.</p> <p>The operational plant emissions have been assessed using appropriate methods and conservative assumptions. The results have been compared to the relevant health related criteria in the ES and the results of dispersion modelling indicate that contributions and resultant environmental concentrations of all pollutants considered are of "negligible" significance.</p> <p>Atkins reviewers concur with Applicant's conclusions.</p> |
| Air pollution | Concerns regarding the potential for long term effects on livestock and farm produce due to toxins from emissions. | <p>An HHRAP has been conducted for dioxins including impact on adjacent farmland, using an internationally recognised approach and with conservative assumptions. This concluded no significant impact and PHE's position statement and their conclusion agree with the Applicant's findings.</p> <p>Atkins reviewers concur with these conclusions.</p> |
| CO ₂ emissions | Concerns regarding the volume of traffic generated by the proposals and the scale of associated carbon emissions generated by the vehicle fleet in transporting waste to the facility. | <p>The applicant has stated that as the change in HGV flows does not exceed the IAQM criteria (a change of <100 daily two way), <i>'the development is not expected to cause a significant change and the significance of the effect is deemed to be 'negligible' and further detailed analysis will not be carried out'</i>.</p> <p>Further information should be provided by the Applicant on the routes that will be used by the HGVs beyond the A31.</p> |

⁴ Email dated 22 July 2020, from Mrs Louisa Thomson, Clerk, Beech Parish Council.

⁵ Email dated 17 July 2020 from Cllr John Goodyear, Chairman, Bentley Parish Council and Cllr John Fuller, Planning Officer, Bentley Parish Council.

⁶ Issues raised at the Planning Meeting on 10th August 2020.

⁷ Email dated 20 July 2020, from Beverley Bridgman, Clerk, Upton Grey Parish Council

⁸ Email dated 02 August 2020 from Jean Frost, Clerk, Wield Parish Council.

How does this fit with decarbonisation commitments?

The Carbon Assessment compares anticipated greenhouse gas emissions from the scheme against a baseline case of sending waste to landfill. This shows a reduction in emissions compared to that baseline. However, some residual emissions will still be generated throughout the operational life of the development. This is presented in the assessment, but has not been considered in the context of national and local decarbonisation commitments by the applicant.

6. NWI Response

This element of Atkins' review focusses on the AQC report dated July 2020 in the Appendix of the No Wey Incinerator (NWI) response, specifically Section 3 Air Quality Review and Section 6 Carbon Assessment Review.

6.1. Air quality

Comments have been made regarding major and moderate issues. Minor issues are deemed unlikely to have a material effect on the outcome of the air quality assessment and therefore have not been reviewed.

| Issue/ Section of report | AQC comment | Atkins' comment | Agree / Disagree with AQC? |
|--|---|---|---|
| Major Issues | | | |
| Exclusion of On-site Emissions, 3.1 to 3.3 | <p>3.1 "The only emission sources considered in the assessment are the main exhaust stacks. It is routine practice on schemes such as this to include a backup source of electrical power by including diesel generators"</p> <p>3.2 "By excluding the emissions from diesel generators from the assessment, the impacts of the Scheme will have been underpredicted."</p> | <p>It is not routine practice to consider emissions from backup generators which are designed to be used in case of emergencies. Backup generators are typically run for a short period, usually less than an hour each month for routine testing or start-up events. Therefore, these limited emissions would be highly unlikely to trigger a cause for concern for meeting 1-hour or annual mean criteria at sensitive receptors. The number of abnormal hours' operation is furthermore limited by the Directive to 60 per year.</p> | <p>Disagree.</p> <p>While the standby generators have not been modelled, this is common practice as the limited operational hours would have no material impact on conclusions.</p> |
| Use of 1% Screening Criterion for Impacts on Sensitive Habitats, 3.4 to 3.11 | <p>3.6 "Paragraphs 8.2.22 and 8.2.23 of the ES, where the approach is set out, state that the method is taken from guidance issued in 2019 by IAQM....However the IAQM guidance which is cited does not support the approach that has been taken."</p> <p>3.7 "While there is no requirement for the assessment to have followed IAQM guidance, and there may be valid arguments why this IAQM guidance is inappropriate, the ES is wrong to claim that</p> | <p>Paragraphs 8.2.22 and 8.2.23 do refer to the IAQM guidance and provide a summary of the section in the IAQM document which relates to the Environment Agency's risk assessment guidance. However this does not mean the Applicant intended to follow IAQM guidance, as the paragraphs quoted above simply represent a summary of the Environment Agency's guidance as is now documented in the IAQM guidance. It is the Environment Agency's guidance that was subsequently followed.</p> <p>Where differences from the approach in the Environment Agency's guidance have been taken this has been made clear in the ES – for example</p> | <p>Partially Agree.</p> <p>Guidance has not been quoted in full in the ES with regard to screening criteria for in-combination assessment.</p> <p>The 1% criterion should be applied to the project alone and in-combination with other plans and projects.</p> |

| Issue/ Section of report | AQC comment | Atkins' comment | Agree / Disagree with AQC? |
|--------------------------|---|---|---|
| | the IAQM guidance supports the approach which has been taken. | <p>at paragraphs 8.2.24 to 26 regarding local nature sites: “as such it is considered appropriate to apply the screening criteria for SSSIs and European Sites to locally designated sites to screen out the requirement for further consideration of the significance of effect for planning”.</p> <p>Rather the ES has omissions in the approach to in-combination assessment which could be made clearer.</p> <p>For example, the guidance given in the Environment Agency’s Air Emissions Risk Assessment states that for “SPAs, SACs and Ramsar sites, you need to consider the ‘in combination’ impact of all permissions, plans or projects that affect the site. Contact the Environment Agency for further guidance on in-combination assessments”⁹.</p> <p>It is not clear in the ES what further guidance the Environment Agency were able to offer or how such guidance has been applied.</p> <p>In-combination effects have been considered for Shortheath Common SAC, by examining seven other HRA reports, as noted at para 5.13 of Appendix 6.6. Out of the proposed projects, the Whitehill & Bordon Eco-town was identified as</p> | <p>It may be argued that this scheme poses no credible risk in-combination as it makes a <i>de minimis</i> contribution. The Applicant should provide further evidence to support their position</p> <p>The Applicant should consider in-combination impacts in more detail, and apply the 1% screening criterion to the in-combination effect. (Note, Appropriate Assessment can be proportionate to the risk and does not always require detailed modelling.)</p> |

⁹ <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit#calculate-pc-to-air>

| Issue/ Section of report | AQC comment | Atkins' comment | Agree / Disagree with AQC? |
|--|---|---|--|
| | | <p>having the greatest potential for air quality effects from traffic. This proposed development could lead to an increase in traffic on the A325, which could potentially affect the Woolmer Forest SAC, overlapping with the Wealden Heaths Phase II SPA for example, which is adjacent to the A325.</p> | |
| <p>Failure to Quantitatively Assess 'In-combination' Effects even Where Scoped In 3.12 to 3.17</p> | <p>3.13 "Appendix 6.6 then lists seven individual developments which were considered in the in-combination assessment. The separate in-isolation assessments which were produced in support of these seven developments were then reviewed where they could be found very easily. The assessment then determines that, because none of the separate in-isolation assessments identifies likely significant effects, there can be no likely significant effects in-combination"</p> <p>3.15 "Appendix 6.6 concludes that none of the seven individual developments which it has considered has the potential to affect traffic flows on relevant roads".</p> | <p>HCC's role as competent authority is to determine whether the proposal is likely to have a significant effect on a European site, and if so, proceed to Habitats Regulations Assessment. The Applicant has provided Information to Inform the HRA in Appendix 6.6.</p> <p>As a first step, as set out in Natural England guidance to competent authorities (noting this is intended for road emissions, not point sources), the scheme should first be considered in isolation, and, if within an appropriate distance of a sensitive habitat, in-combination. Both results should be compared to screening thresholds. If the scheme alone falls below the threshold for further assessment, then the next step is to consider whether the scheme in-combination with other plans/projects would meet the screening criteria.</p> <p>Natural England, who have been consulted by the Applicant, stated in their response there is insufficient information to rule out likely significant effects (LSE) at Shortheath Common due to acid deposition. There is no suggestion on their part that in-combination impacts have not been</p> | <p>Partially agree.</p> <p>The in-combination assessment for Shortheath Commons SAC has been undertaken in consultation with Natural England, and air quality effects from traffic from other plans and projects have been considered in-combination with the effect from the proposed scheme, albeit qualitatively.</p> <p>The Applicant should consider in-combination impacts in more detail, and apply the 1% screening criterion to the in-combination effect.</p> <p>As noted in Natural England guidance NEA001, a pragmatic approach needs to be taken, and the proposed plan or project needs to remain the focus of</p> |

| Issue/ Section of report | AQC comment | Atkins' comment | Agree / Disagree with AQC? |
|--------------------------|-------------|---|---|
| | | <p>sufficiently considered at this or other sites. They suggest a way forward with mitigation.</p> <p>It is agreed that the screening for the in-combination assessment has only been carried out for the Shortheath Common SAC rather than the other European designated sites within 10 km. Natural England appear, however, to be satisfied with the Applicants approach to discounting other impacts where the PC is less than 1% for the scheme alone.</p> <p>Table 7 of Appendix 8.3 shows Wealden Heaths Phase II SPA is a similar distance away and with a similarly low critical load (Table 31), however the impact of stack emissions is slightly lower than that at Shortheath Common SAC. The PEC for N and acid deposition substantially exceeds the CL, however in this case the habit upon which the identified species (wood lark) is not sensitive to acid deposition (Table 32). It is not clear why the Applicant has not assessed the impact on the nightjar species, which is also sensitive, but this may have been part of discussions with Natural England. This needs further clarification from the Applicant.</p> <p>Seven HRA reports for plans and projects were reviewed by the Applicant. Para 5.18 of Appendix 6.6 concluded that none of the local plan HRAs identified a likely significant effect of traffic generation on Shortheath Common SAC as the site was not located within 200 m of any roads</p> | <p>assessment (para 4.47, NEA001).</p> <p>Applicant to clarify selection of certain bird species and not others.</p> |

| Issue/ Section of report | AQC comment | Atkins' comment | Agree / Disagree with AQC? |
|--------------------------|-------------|---|----------------------------|
| | | <p>likely to experience increased traffic volumes as a consequence of the implementation of plan policies.</p> <p>The Applicant has not considered whether there are other proposals for point source emissions in the locality which may also have an impact on European sites. However, the detailed modelling of stack emissions for the AAERF showed a negligible process contribution of less than 0.1 µg/m³, an immeasurably small impact, at the closest SAC/SPA.</p> <p>Minor local roads, such as those that pass by Shortheath Common, would not typically be included in a detailed assessment of vehicle emissions and furthermore are highly unlikely to be used by HGVs accessing the AAERF. However, this has not been made clear in the TA and needs further clarification.</p> <p>The air quality assessment screened out the need for quantitative vehicle emissions modelling in line with IAQM guidance as the change on the A31 would be <100 HDVs each day (outside an AQMA). It is unclear from the assessment whether the additional AAERF traffic would travel on any roads within 200 m of the ecological sites. The TA was limited to a section of the A31 only and does not clarify if the additional HDVs only use the strategic road network. Nevertheless, any change on minor roads near ecological sites would likely be minimal. The area of interest (bog</p> | |

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| | | <p>woodland) within Shortheath Common is not located at the roadside, where deposition rates are highest. There would therefore not be expected to be material change to the Applicant's conclusions.</p> <p>The woodland deposition rate has been used to calculate deposition at this habitat and to give the background deposition rate on APIS, which on its own far exceeds the critical load range. The contribution from the AAERF at 0.008 keq/ha/yr rounds up to 0.01 keq/ha/yr, the smallest increment that the APIS CLF tool will consider. The Applicant has reasonably described this as <i>de minimis</i>.</p> | |
| Moderate Issues | | | |
| <p>Exclusion of off-site emissions 3.18 to 3.21</p> | <p>3.18 "The impacts which have been quantified are those caused by emissions from the main stack of the plant. Emissions from Scheme-generated road traffic have been screened out from the assessment on the basis that the number of vehicles falls below criteria set in guidance issued by IAQM in relation to impacts on human health. However, the cited guidance is quite clear that these criteria are intended to determine whether there is a need to proceed to an air quality assessment. They are not intended to discount individual sources from an assessment which is being carried out."</p> | <p>The ES notes (para 8.4.16) that the number of vehicle movements during the operational phase would be 96 HGVs per day, with a net reduction in car movements compared to existing. Based on this information there is no need to consider further the effect on local air quality from the vehicle movements, as correctly noted in the ES.</p> <p>The AQC document implies that emissions from these vehicles, regardless of falling below the IAQM indicative threshold, should be combined with the stack emissions, to consider the effect on receptors near to the A31.</p> | <p>Partially agree</p> <p>The Applicant's conclusion is likely to be correct.</p> <p>Applicant to provide a screening calculation at A31 roadside receptor and within an AQMA to demonstrate the traffic impact is requested.</p> |

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| | <p>3.19 “While emission from Scheme-generated traffic may not be significant on their own, they will add to the impacts caused by emissions from the stack. This is particularly relevant for this Scheme since emissions from the stack will affect receptors alongside the same roads affected by site generated traffic. Thus, by quantifying the impacts from the stack without considering the additional increment from site-generated traffic, the impacts of the Scheme as a whole will have been underpredicted.”</p> | <p>The Applicant has given some consideration to this, at a level deemed proportionate to the potential risk of exceedances at the roadside receptors. Given the very low background concentrations in the area, any underprediction was reasonably considered by the Applicant to not be a material concern.</p> <p>Receptors near to the A31 which could be affected would be human health receptors R3 and R4 as noted in 8.4.25 of the AQ chapter. The process contribution (PC) from the stack at these receptors is expected to be 0.6 µg/m³, which when combined with a background of 14.8 µg/m³ gives a total contribution (PEC) of less than half of the AQS objective of 40 µg/m³. The authors of the ES acknowledge that the PEC may be underestimated given that emissions from the A31 have not been included, and note that an additional contribution from the road of 14.6 µg/m³ would be required to tip this over the threshold. They consider that this would be highly unlikely as the road is free flowing. Hence the combined effect has been considered in a purely qualitative manner at relevant human health receptors.</p> <p>The DfT website has data for the A31 in this area suggesting AADT 22,000 while a free-flow speed assumption appears reasonable based on reference to Google maps traffic data. A screening calculation to demonstrate this would be of assistance to HCC for transparency purposes for the HRA and decision making.</p> | |

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| Use of spatially-averaged 'background' values to represent location-specific 'baseline' values 3.22 to 3.23 | <p>“Where the assessment has predicted total ambient concentrations, this has been done by adding the increment from the Scheme to spatially-averaged background values. This is appropriate for those pollutants which, without the Scheme, are expected to be relatively spatially homogenous. It is not appropriate where there are significant localised sources of emissions within the study area; for example, when predicting NO₂ concentrations alongside busy roads. The ES does acknowledge this limitation in paragraph 8.4.25, noting that some of the homes which could experience potentially significant impacts are already alongside the A31 and that the PECs will thus be under-predicted. However, an assumption is then made, without providing any evidence, that this under-prediction will not affect the conclusions. It is agreed that the effect of current traffic using the A31 is probably insufficient to change the assessment’s conclusions. However, it is not possible to be confident of that assumption without some form of robust quantification. This might come from locally-verified modelling, or monitoring.”</p> | <p>Atkins agrees with this view, in that it is a reasonable request to justify the assumptions made in paragraph 8.4.25 with some local monitoring or modelling, but the emissions from the A31 are probably unlikely to alter the conclusions of the assessment.</p> <p>See above response for suggested approach. Reference could be made to monitoring data for roadside locations within the wider EHDC area. Atkins results from the Bordon air quality survey could support the Applicant’s further work.</p> | <p>Partially agree</p> <p>Applicant to provide a screening calculation at A31 roadside receptor and within an AQMA</p> |
| Presentation of Consistent Downward Trends 3.24 to 3.31 | <p>3.29 “While there are significant uncertainties regarding the rate of change in acid deposition in the future, it is agreed that a net downward trend can be expected. However, the rate of decline in the future is currently extremely difficult to predict and</p> | <p>The authors of the ES note at para 8.3.3 that “as a conservative assumption, the concentrations identified in the baseline analysis have been assumed to be constant in future years”. The comment regarding historic trends is not relevant,</p> | <p>Disagree</p> |

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| | <p>will almost without doubt be significantly shallower than that which was seen historically for SO₂ emissions. By choosing to present the steep decline in SO₂ emissions as a model for future declines in total acidity, the adverse effects of the Scheme have been misrepresented.”</p> <p>3.30 “Paragraph 5.13 of the Appendix 6.6 states: “the predicted process contribution would not prevent the achievement of an acid deposition rate below the site-relevant Critical load”. From the above discussion, it should be clear that it is not currently possible to robustly predict any future date when the critical load will be achieved; or even that it will ever be achieved based on current evidence”</p> | <p>given that the air quality assessment assumes no reduction in future years.</p> <p>The APIS website is regularly updated with three year average concentrations. The Applicant has not stated which version of the database was used in the ES.</p> <p>Paragraph 5.12 of Appendix 6.6, the Statement to inform the Appropriate Assessment (SIAA) refers to the trend in acid deposition at the Shortheath Common SAC shown on the APIS website, which is a downward one, and is still declining. It is a valid argument to show historic trends.</p> <p>As noted in the IAQM guidance para 5.4.2.7 “the government is legally committed, under the 2016 National Emissions Ceiling Directive to reduce these [ammonia] emissions, along with SO₂ and NO_x emissions. The UK has a good track record on meeting its international emission reduction obligations.”</p> <p>The DEFRA Clean Air Strategy (2019) demonstrates a consistent reduction in SO₂ over the past 20 years albeit clearly less steep than that pre-2000. The strategy describes an aim to reduce emissions of sulphur dioxide against the 2005 baseline by 59% by 2020, increasing to 88% by 2030 therefore a continued downward trend is to be expected.</p> | |

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| | | It is a valid argument to note this in the SIAA | |
| Model Grid Resolution 3.32 to 3.33 | 3.32 "The grid resolution used is 90m x 90m even close to the stack. This is a particularly coarse grid and it is common and best practice to use a much finer resolution than this close to an emission source. Justification of the approach is given in section 4.4.1 of Appendix 8.3 which states that "the Environment Agency's modelling guidance" advises that a value of 1.5 times the stack height should be used. | <p>The Environment Agency guidance referred to in the ES may have been updated since the authors used it. Guidance is provided here: https://www.gov.uk/guidance/environmental-permitting-air-dispersion-modelling-reports</p> <p>Where it notes "<i>you must justify your choice of grid resolution</i>". While such justification is lacking from the ES it would need to be provided to the regulator at permitting stage.</p> <p>The AAERF stack is 80 m high and the tallest building is 40 m. The maximum ground level concentration is almost 500 m from the stack. The building sensitivity assessment has demonstrated there to be little effect on maximum ground level concentrations of the modelled structures. There are no sensitive receptors in the immediate vicinity of the AAERF.</p> <p>On this basis, there is no reason to believe that, for this particular assessment, the use of a 90 m grid resolution would not provide a sufficiently robust assessment.</p> <p>Atkins are satisfied that a finer grid would not have a material impact on the findings as presented.</p> | Disagree |
| Stack Height Analysis 3.34 | 80 m does not represent a point at which further height increases have significantly smaller effects | The point raised is of marginal impact. By referring to Graph 1 in Appendix 8.3 Section 5, the improvement that would be achieved in ground level annual mean NO ₂ from an additional 10 m in | Disagree |

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| | | <p>stack height is equivalent to 1% of the annual mean objective, at the point of maximum impact (not a sensitive receptor, where the significance criteria would apply).</p> <p>Stack height is typically increased to avoid downwash effects which can result in excessively high <i>short-term</i> concentrations. Once this has been achieved, there is a point at which ever smaller reductions in annual averages are not justifiable. The choice of stack height is not purely defined by the stack height sensitivity and must also take into consideration such matters as aviation safety, structural integrity and visual impact, as well as cost.</p> <p>The Applicant has selected 80 m and subsequently conducted a building sensitivity assessment. This demonstrated there to be little effect on maximum short-term ground level concentrations of the modelled structures. The Applicant's assessment has demonstrated no significant impacts of any pollutants. There would be only a marginal benefit to a higher stack at the point of maximum impact; any benefit would be much smaller at receptors further afield as concentrations decrease rapidly with increasing distance from source.</p> | |
| Identification of Relevant Areas of Exposure 3.35 to 3.36 | 3.35 "Section 2.2 of Appendix 8.3 of the ES denotes the locations which have relevant exposure to different air quality objectives. The 1-hour mean objective applies in "Any | It is not clear either from online maps or the West End Flower Farm website if the area around the lake is open to the public and thus a relevant | Disagree |

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| | <p>outdoor locations where members of the public might reasonably be expected to spend one hour or longer". Paragraph 8.4.31 of the ES describes impacts in an area shown in Figure 8.13 of the ES as "a small area of a farm field. There are no known public footpaths in this field so public exposure for an hour or more is highly unlikely." ...</p> <p>3.36 "The area in question (shown in Figure 8.13 of the ES) forms part of West End Flower Farm, which is a tourist attraction, open to the public five days per week and attracting significant numbers of visitors each year. The area around the lake is open to the public with designated picnic and fishing areas. The area shown in Figure 8.13 of the ES specifically encompasses designated picnic pitch Number 1. On this basis the area clearly does represent relevant exposure to the 1-hour NO₂ objective."</p> | <p>exposure location. The majority of the area within the contour appears to be a farmer's field.</p> <p>The Applicant's assessment has shown that even using robust and conservative assumptions, there would be no significant impact at the receptors closest to the facility.</p> | |

6.2. Climate change

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| Carbon Assessment, 4.58 | "The development is not 'climate positive' as claimed by some of the developer's PR material. In order to be truly climate positive the development would need to result in negative carbon emissions. The developers own analysis demonstrates that this is not the case." | 'Climate positive' is not a firmly defined state or formal accreditation. However, it is typically taken to mean having gone beyond 'net zero' carbon to achieve net removals of greenhouse gases from the atmosphere. The development will not do this, and the Carbon Assessment does not state that it will. | Agree |
| Carbon Assessment Review, Approach, 2.2 | Recommendation 1: Report to consider alternative baseline options | A single baseline scenario, whereby waste is sent to landfill, has been used. It is agreed that this does not reflect the true range of potential alternative scenarios, particularly considering future scenarios. | Agree |
| Carbon Assessment Review, Scope of Emissions Sources, 2.4 | Recommendation 2: Analysis to consider construction CO ₂ e emissions from AAERF | Whilst carrying out an assessment of construction emissions would provide completeness to the study, as a relatively small overall contributor of emissions and one which would occur long before the UK's net zero 2050 target, it is felt that quantifying the magnitude of construction emissions would not help a decision regarding planning permission. It is already known that the development will generate emissions in the construction phase. Of more benefit would be a better understanding of potential operational emissions given different scenarios, as highlighted elsewhere. | Disagree |
| Carbon Assessment Review, Scope of Emissions Sources, 2.5 | Recommendation 3: Landfill CO ₂ e assessment to consider impact of sequestering biogenic carbon. | This would provide a more complete picture of the baseline scenario against which the development is being compared. Currently, this element is missing, which potentially misrepresents the impact of landfill as being higher than would be the case were this mechanism addressed. | Agree |

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| Carbon Assessment Review, Temporal Scope, 2.9 | <p>Recommendation 4: The assessment should present operational CO₂e emission over the full lifecycle of the AAERF starting in the opening year (2023) and then each subsequent year over its proposed 25-year life until 2048. The cumulative CO₂e emissions over this period should be compared to the landfill baseline to assess the carbon implications of the AAERF.</p> | <p>The Carbon Assessment does present lifetime emissions – stated to be “an overall benefit of 1,629,750 tonnes of CO₂e over the lifetime of the Facility”. As no projections of how variables might change with time have been made, this simple method of multiplying per annum emissions by the overall life of the scheme works.</p> <p>The issue is more around the fact that no projections have been made to inform this overall cumulative impact.</p> | Partially agree |
| Carbon Assessment Review, Temporal Scope, 2.9 | <p>“Recommendation 5: A comprehensive sensitivity assessment should be provided reflecting uncertainties in the opening year and lifetime of the project” on the basis that “the sensitivity testing provided in the assessment covers only the landfill gas recovery efficiencies and electricity grid carbon offsets and does not cover other uncertain variables.”</p> | <p>It is agreed that the assessment does not consider potential future changes in both baseline and project scenarios, and that this limits the usefulness of the findings as it does not present the full range of potential effects on climate. The assessment would benefit from considering a wider range of variables in its sensitivity analysis.</p> | Agree |
| Carbon Assessment Review, Data Inputs and Assumptions, Table 1 | <p>Various recommendations are made about substantiating / justifying assumptions made in the assessment:</p> <p>“Recommendation 6: Provide further detail on the assumptions and underlying basis for waste throughput including total carbon and biogenic carbon content.”</p> <p>“Recommendation 9: Provide further evidence to substantiate assumptions on metals recovery including the amount of metal recovered, and the balance of steel and aluminium recovered.”</p> <p>“Recommendation 10: Provide further evidence and justification for the assumptions related to waste transport distances.”</p> | <p>All assumptions in the assessment should be robustly justified to demonstrate that the result is valid.</p> <p>The applicant has not evidenced many of the assumptions in the assessment, including those highlighted by AQC.</p> | Agree |

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| | <p>“Recommendation 11: The assessment should represent the central likely scenario based on recommended LFG recovery figure of 75%.”</p> | | |
| <p>Carbon Assessment Review, Data Inputs and Assumptions, Table 1</p> | <p>Recommendations are made around including further sensitivity analysis: “Recommendation 7: Calculate CO₂e emissions using government published long run marginal generation grid factors for 2023 and each year to 2048 (end of life).” “Recommendation 13: Sensitivity assessment should examine effects of higher LFG recovery rate with time until 2048.” “Recommendation 14: Sensitivity assessment should examine effects of lower landfill gas methane content, and/or a landfill gas methane content better evidenced as representative of the waste streams likely to be received by the AAERF.”</p> | <p>Where variables are uncertain, for example in future scenarios, it is good practice to include sensitivity tests to make sure this variation does not affect the overall result. It is agreed that the applicant could have gone further with sensitivity tests to demonstrate the impact of the project under different variable scenarios.</p> | <p>Agree</p> |
| <p>Carbon Assessment Review, Data Inputs and Assumptions, Table 1</p> | <p>“Recommendation 8: Calculate the cumulative emissions over the lifetime of the facility.” “Recommendation 12: Calculate cumulative GHG emissions from opening year to end of life year to enable comparison to AAERF emissions on a like for like basis.”</p> | <p>The Carbon Assessment does present lifetime emissions – stated to be “an overall benefit of 1,629,750 tonnes of CO₂e over the lifetime of the Facility”. As no projections of how variables might change with time have been made, this simple method of multiplying per annum emissions by the overall life of the scheme works. The issue is more around the fact that no projections have been made to inform this overall cumulative impact.</p> | <p>Partially agree</p> |
| <p>Carbon Assessment Review, Alternative</p> | <p>An alternative set of carbon calculations, using different assumptions, have been put forward. These suggest that the project would have a net negative impact over the</p> | <p>This highlights the key weakness of projected carbon assessments; by necessity, they are often based on many assumptions. What the alternative calculations show is that, in this case,</p> | <p>Partially agree</p> |

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| Carbon Calculations, 3.1 to 3.10 | landfill baseline, rather than a positive impact as asserted by the applicant. | <p>fairly minor adjustments to the input data can completely change the outcome of the assessment and how the project might be viewed. It is especially important in projects such as this that all assumptions are robustly justified, and that where specific assumptions would be inappropriate a sensitivity test is carried out to illustrate the potential range of outcomes. The applicant has not done either in a convincing manner.</p> <p>It would be for the applicant to defend or alter their assumptions in light of the specific alternative calculations presented. However, it is agreed that the assumptions selected have a significant impact on the outcome and should be reconsidered.</p> | |
| Carbon Assessment Review, Policy Position, 4.1 to 4.3 | The National Planning Policy for Waste and Waste Management Plan for England are cited as requiring energy for waste plants to be located close to potential heat customers to maximise the benefit of the plant. It is noted that The proposed AAERF does not have a viable plan for use of its waste heat. | <p>It is agreed that it is preferable for EfW plants to make use of their waste heat to maximise carbon benefits, and that this generally comes down to where the plant is sited. However, the Carbon Assessment excludes this element and – with its current assumptions – shows a net carbon benefit associated with the project, without waste heat use. Whilst the policies quoted do recommend the technology is ‘more beneficial if both heat and electricity can be recovered’, they do not set a mandate that waste heat must be recovered. (Similarly, the Environment Agency consider overall energy efficiency within their regulatory permitting remit, and typically require EfW facilities to be “heat export ready”).</p> | Partially agree |
| Carbon Assessment Review, Policy | “It is therefore clear than any assessment of the environmental impacts of an energy from waste facility such as AAERF should consider a range of factors that may change over the lifetime of the facility. This | It is agreed that the assessment does not consider potential future changes in both baseline and project scenarios, and that the assessment | Agree |

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| Position, 4.7 to 4.9 | <p>has not been carried out within Fichtner’s carbon assessment, which has focussed solely on limited variables in the opening year of 2023.”</p> <p><i>“To understand fully the relative benefits of energy from waste against other solutions a full life cycle assessment for the specific circumstances will be required.”</i></p> | would benefit from considering a wider range of variables in its sensitivity analysis. | |
| Carbon Assessment Review, Policy Position, 4.12 | <p>“The report, entitled No Time to Waste (Policy Connect), provides recommendations to Government for future waste policy. With respect to energy from waste, the report recommends that Government support for energy from waste is contingent on three key initiatives:</p> <ul style="list-style-type: none"> • Government should develop policies to support the introduction of carbon capture and storage technologies into energy from waste facilities; • authorities should ensure that the location of facilities prioritises finding potential heat customers to receive heat from the facility; and • all plastics should be eliminated from the residual waste streams to prevent waste with low biogenic carbon content being treated in energy from waste facilities.” | This document provides recommendations to government; however, it is not itself a policy document and these initiatives are not mandated. The recommendations therein may be issues that HCC wishes to take into consideration. | Partially agree |

7. Conclusion

Atkins has reviewed the Applicant's ES air quality and climate change chapters and supporting documentation, statutory consultee responses and the No Wey Incinerator (NWI) group's own third party assessment.

The Applicant's assessment for air quality was generally found to be comprehensive with conservative assumptions built in to give robust conclusions. Some exceptions apply, in particular to in-combination effects at habitat sites, which are in line with some of the points raised by consultees and NWI.

On the basis of the air quality and climate review, it is suggested that the Applicant is asked to:

- Clarify the impact of the development on the wider road network. As a minimum this should consider the A31, London Road Alton, AQMAS, and roads within 200m of relevant ecological receptors. The findings from the road emissions assessment should be considered;
 - a) for the EIA, in combination with stack emissions, and
 - b) for the HRA, in combination with other committed developments; using the 1% screening criterion;
- Provide the findings for short-term impacts of stack emissions as the maximum modelled hourly/daily concentration, (including for the stack height study), at specific short-term receptors in close vicinity, e.g. public right of way footpaths;
- Comment on the potential for a future worsening in baseline air quality, to confirm that the assumption of it remaining stable in future is robust, in light of EHDC Local Plan proposal for 5,000 vehicles in the A31 growth corridor and comments from NE regarding uncertainty;
- Perform a sensitivity test for dioxin emissions for the HHRAP using an assumption that all 2,3,7,8-TCDD, but using a more realistic background concentration at the location of maximum impact;
- Propose measures that will be used to control construction plant emissions and that could be included within a CEMP, e.g. NRMM regulations, location of vehicle exhausts, (vertical, unimpeded discharge), use of electric/battery powered equipment where possible;
- Describe how the measures that will be in place to control dust/odour fugitive emissions will be monitored and maintained, such as CEMS, automatic gas alarms, regular sniff tests at site boundary. This will give confidence to HCC that the OMP which will be developed as part of the permit will achieve the stated ELVs and other requirements. (Note – there is potential for complaints to fall between the planning and permitting regulatory regimes, without a clear and joined up reporting mechanism, e.g. the LA should be informed of any complaints received by EA/Veolia direct, and vice versa, to ensure one single, combined complaint log).
- Consider the development in the context of national and local climate change policy, including the development's potential to impact achievement of the UK's Carbon Budgets, the 2050 Net Zero target, and the climate emergency declarations and carbon reduction ambitions of local authorities.
- Provide full justification and sources for all assumptions and scenarios informing the Carbon Assessment. Some of these assumptions may need to be reconsidered in the light of comments, e.g. those in AQC's review of the Assessment.
- Reconsider the 'scenarios' used for the baseline and development in the Carbon Assessment and ensure they appropriately reflect potentially changing variables over the projected lifetime of the development. This might include carrying out further sensitivity testing, if these variables are not well understood, to illustrate the potential range of the uncertainties.
- Carry out a significance assessment in accordance with accepted methodologies for both effects on climate and vulnerability to climate change.
- Present proposed mitigation measures to reduce greenhouse gas emissions from the development in operation.
- Prepare a more detailed regional/local baseline for the assessment of climate vulnerability.
- Carry out a more detailed assessment of climate vulnerability issues using an accepted methodology (consider using IEMA's latest guidance), including additional impacts which have not currently been considered. Some ideas are included in 4.1.2.6 of this report.
- Justify the sizing of the design storm event used for the development of the drainage design, and clearly present any other climate change adaptation mitigation measures.

It is worth reiterating that Atkins generally concur with the Applicant's conclusions for air quality, other than regarding the above bullet points and certain points of detail to provide additional confidence, as highlighted throughout the review.

It is noted that a key concern of many objectors to the proposed development relates to a common assumption as to a likelihood of adverse human health effects due to stack emissions. The operational plant emissions have been assessed using appropriate methods and conservative assumptions. The results have been compared to relevant health criteria in the ES and the results of dispersion modelling indicate that the facility stack contributions and resultant environmental concentrations of all pollutants considered are of "negligible" significance.

A Human Health Risk Assessment has been carried out by the Applicant, using an appropriate and internationally recognised method and with conservative assumptions.

The Public Health England response included: "*PHE is satisfied that the applicant has used a dispersion model and assessment criteria that are in line with UK guidance and good practice and has identified appropriate sensitive receptors.*" "*PHE's position statement on the impacts on health of emissions to air from municipal waste incinerators concluded any effects on health, 'if they exist, are likely to be very small and not detectable'. PHE is satisfied that the applicant has approached the Environmental Impact Assessment (EIA) in a manner consistent with the UK requirements.*"

The Surrey CC response stated that: ... "*the ERF will have to comply with stringent emissions standards set by EU directives for the protection of health and the environment. The applicant has assessed the potential air quality impacts from the proposed thermal treatment of waste through detailed dispersion modelling using best practice approaches. The results of dispersion modelling indicate ... resultant environmental concentrations of all pollutants considered are of "negligible" significance. The applicant will need to obtain an Environmental Permit from the Environment Agency (EA) who are the body responsible for regulating the ERF. This will contain specific limits for emission from the ERF in order to ensure a high level of protection is provided for the environment and human health...These regulatory requirements will therefore ensure that the proposed ERF will not have an adverse impact on human health or the environment in Surrey...*"

The responses from Surrey CC and PHE align with Atkins' position.

The carbon assessment demonstrates the project would produce lower greenhouse gas emissions during operation than the alternate 'baseline' scenario. However, no assessment of the significance of any impact is presented, nor any consideration of UK or local policy on climate change. No mitigation measures to reduce climate impacts in operation are described. Whilst the vulnerability section covers some of the main issues, the assessment does not follow an established assessment methodology, and is lacking detail in terms of the baseline, receptors and potential impacts. There is no assessment of significance or description of residual impacts. Some potential impacts have not been considered and thus clarification should be sought from the Applicant.