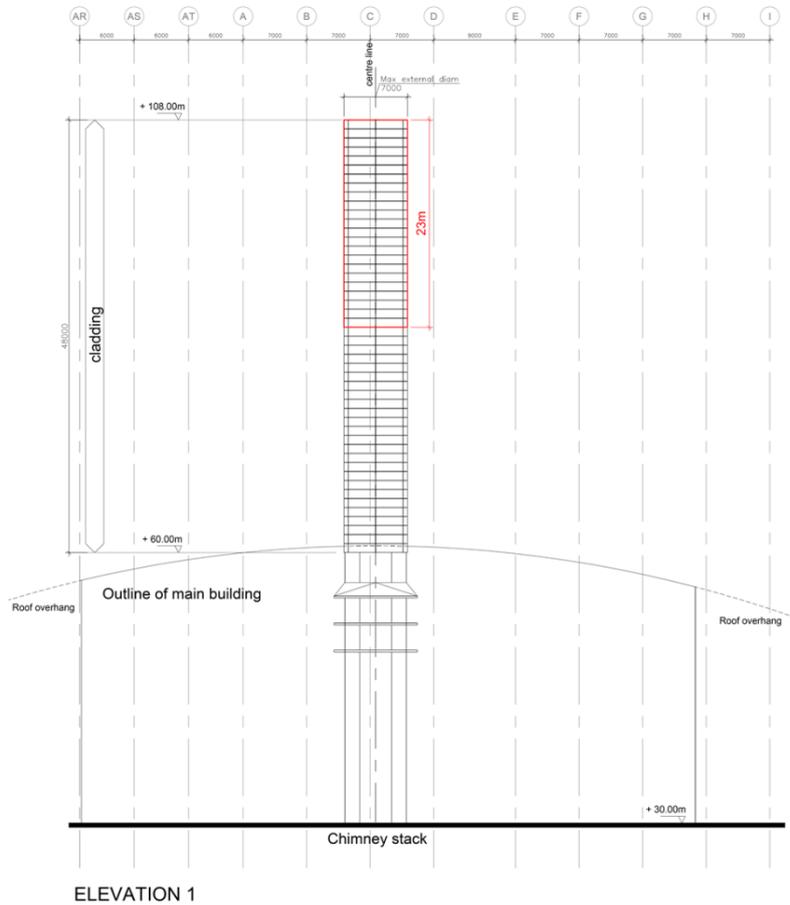


GENT FAIRHEAD & CO. LIMITED



IWMF PLANNING APPLICATION(S) ESS/36/17/BTE &
ESS/38/17/BTE

RESPONSE TO THE PAIN REPORT



OCTOBER 2018

GENT FAIRHEAD & CO LIMITED

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1 INTRODUCTION

Planning Permission ESS/34/15/BTE is the extant and implemented planning permission for the Integrated Waste Management Facility (IWMF) at Rivenhall Airfield, Essex. The description of the IWMF development under Planning Permission ESS/34/15/BTE is as follows:

"An Integrated Waste Management Facility comprising: Anaerobic Digestion Plant treating mixed organic waste, producing biogas converted to electricity through biogas generators; Materials Recovery Facility for mixed dry recyclable waste to recover materials e.g. paper, plastic, metals; Mechanical Biological Treatment facility for the treatment of residual municipal and residual commercial and industrial wastes to produce a solid recovered fuel; De-Inking and Pulping Paper Recycling Facility to reclaim paper; Combined Heat and Power Plant (CHP) utilising solid recovered fuel to produce electricity, heat and steam; extraction of minerals to enable buildings to be partially sunken below ground level within the resulting void; visitor/education centre; extension to existing access road; provision of offices and vehicle parking; and associated engineering works and storage tanks, at Rivenhall Airfield, Coggeshall Road (A120) Braintree"

The height of the stack currently permitted at the site is 85m AOD or 35m above surrounding ground level.

An Environmental Permit is needed to operate the IWMF. On the 21 December 2016, the Environment Agency issued a refusal notice against the first Environmental Permit Application that had been submitted by Gent Fairhead & Co Limited for the stack height of 85m AOD or 35m above surrounding ground level. The reason for the Environment Agency's refusal was given as follows:

"Based on the information that has been provided to us, we are not satisfied that you [the Applicant] have demonstrated that the proposals reduce emissions and their impact on the environment through the use of Best Available Techniques (BAT) and in particular that the proposed stack height is BAT"

However, the Environment Agency agreed in its report that the facility (with a stack at a height of 85m AOD or 35m above surrounding ground level) was unlikely to contribute to exceedances of any Environmental Standard for human health or cause air quality standards to be breached.

In providing its reasons for refusal the Environment Agency's highlighted that the IWMF would meet recommended standards, but the Agency believed that if the stack was increased in height it would reduce the emissions impacts even further. By increasing the height of the stack, the Agency suggested the IWMF proposals would incorporate Best Available Techniques, even though the proposed emissions limits from the IWMF would have been the most stringent in the UK for an Energy from Waste facility and would have tackled emissions at the point of source rather than reducing them by increasing the height of the stack.

Within the Environment Agency's decision report, it is noted that on the 21 September 2016 the Agency consulted with Essex County Council to seek their views on the status of the implemented planning permission ESS/34/15/BTE and views on any proposed changes to the extant permission. Through consultation Essex County Council confirmed: *"any changes to the proposal would trigger a requirement for a variation application to the current planning consent"*

Having considered the Environment Agency's detailed decision report and the reported consultation response offered by Essex County Council; on the 3 March 2017, a second (revised) Environmental Permit application was submitted to the Environment Agency for a stack 58 m above surrounding ground level with an elevation of 108 mAOD.

On the 11 September 2017 the Environment Agency issued Environmental Permit EPR/FPP3335YU/A001.

In order to operate, the Rivenhall IWMF needs both planning permission from Essex County Council and an environmental permit from the Environment Agency. These are separate and distinct processes and planning permission can be granted without the environmental permit and vice versa.

The planning system addresses the acceptability of a proposed development in terms of the use of the land, location, the need for a facility, the amount of waste generated as well as wider issues, such as the visual impact. The Environmental Permitting Regulations address the design and operation of the process to prevent pollution and minimise impacts on the environment and human health.

To correspond with the revised stack height within the Environmental Permit, namely at a height of 58 metres above surrounding ground level (or 108 m AOD), two planning applications were submitted to Essex County Council:

Application No: ESS/36/17/BTE

Proposal: Full application to increase stack (chimney) height from 85m Above Ordnance Datum to 108m AOD (35m above existing ground levels to 58m above existing ground levels) of the Integrated Waste Management Facility 1.

Application No: ESS/37/17/BTE

Proposal: Continuation of Integrated Waste Management Facility 1 permitted by ESS/34/15/BTE without compliance with conditions 2 (application details), 14 (stack [chimney] design and cladding, 17 (Combined Heat & Power Management Plan) and 56 (maximum stack height) to amend details resulting from the increase in stack height.

The planning application(s) were made by Gent Fairhead & Co Limited (GFC) to Essex County Council (ECC) simply to increase the proposed height of the stack at the permitted IWMF on the former Rivenhall Airfield near Kelvedon in Essex.

The IWMF is allocated as a permanent strategic site within the Waste Local Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination in Public) of the IWMF proposals, which are supportive of Essex's principle aim of "Net Self-Sufficiency".

The Examination In Public of the Waste Local Plan was held between the 27 September 2016 and 7 October 2016, and the Inspector was made aware of representations submitted by members of PAIN to the Environment Agency (when considering the first Environmental Permit application for a stack of 35 m above surrounding ground level) requesting that the IWMF stack should be increased in height. In addition, the Examination in Public took place following Essex County Council's comments to the Environment Agency in consultation to the first Environmental Permit.

Within her report on the examination into the Replacement Waste Local Plan, the Inspector concluded in paragraph 54:

Although there was strong opposition to this allocation, the grant of planning permission has established the principle of this form of development on this site. It is also a firm indication that the waste management capacity is likely to be delivered during the lifetime of the RWLP. I understand that further work will be required as a result of the Environmental Permitting process, including a revision to the design in relation to the height of the stack. The fact that an Environmental Permit is being pursued supports the case that the facility should be regarded as deliverable. Although other concerns were raised, including the detailed arrangements between this facility and the Tovi Eco Park or the extent to which it might actually function as a combined heat and power facility, these do not alter the appropriateness of the site for the allocated waste management uses.

The planning application(s) ESS/36/17/BTE and ESS/37/17/BTE made by Gent Fairhead & Co Limited (GFC) to Essex County Council (ECC) simply seek to increase the proposed height of the stack at the permitted IWMF on the former Rivenhall Airfield near Kelvedon in Essex. The environmental impacts associated with the proposed change in stack height have been fully assessed the air quality, human health, habitat, landscape and land use impacts associated with the proposed 23m increase in the IWMF's stack height, which have demonstrated that its impact(s) associated with the change from the existing baseline environment would be Low.

Through Essex County Council's consultation into the above planning application(s) Parishes Against Incinerator (PAIN) submitted a document "*Rivenhall IWMF: A case for refusal through evidence and analysis*" which set out a number of arguments to suggest that planning permission should not be granted.

This report has been prepared to address the points that have been raised and clarify how they have been considered within the planning application(s) and the additional information issued to Essex County Council in support of the application(s).

2 THE NEED FOR THE IWMF

The PAIN report states that:

"There is now no clear need for this facility: Essex recycles a significant proportion of its waste (and this figure is continually increasing), with the remaining recovered fuel incinerated in Holland and Germany at existing plants. Permitting this addition variation turns Essex into a net importer of waste as it will involve almost 137,000 additional truck movements annually (assuming 404 per day and 300 days operation as granted)."

To address the comments offered by PAIN the following clarifications are provided:

2.1 IMPLEMENTED PLANNING PERMISSION ESS/34/15/BTE

Planning permission for the existing and implemented IWMF was granted on the 26 February 2016. Within Essex County Council's Development and Regulation Committee Report DR/05/16 the need for the IWMF was fully considered when planning permission was granted, and the following statements from that report highlight the need for the IWMF to deliver self-sufficiency for Essex in the management of its municipal (LACW) and commercial (C&I) waste streams:

- i. The principle of a waste management facility in this location was first established through the Waste Local Plan 2001 when a 6ha site known as WM1 was allocated, which included the then existing airfield hangar;
- ii. The application for the IWMF was considered against the WLP 2001, the Regional Spatial Strategy (RSS) and Planning Policy Statement 10 (PPS10). The RSS has subsequently been abolished, the NPPF published and PPS10 now replaced with the National Planning Policy for Waste (NPPW). In terms of locational criteria for waste management facilities, these have brought no significant changes. Of perhaps note is that the NPPF now does not require protection of the countryside for its own sake, only where there are particular designations. The NPPW objectives are the same as PPS10 including net self-sufficiency and the proximity principle seeking to locate waste facilities such that communities and businesses take more responsibility for their own waste, thereby reducing waste miles. The NPPW recognises *"that new facilities will need to serve catchment areas large enough to secure the economic viability of the plant"*;
- iii. The NPPW locational criteria include consideration of the following factors, protection of the water environment, landscape and visual impacts, nature conservation, conserving the historic environment, traffic and access, air emissions, including dust, odours and vermin and birds, noise, light and vibration, litter and potential land use conflict. All of these factors were considered by the WPA when making its resolution on the original IWMF application and were considered by the Inspector as part of the Public Inquiry;
- iv. As part of the emerging Replacement Waste Local Plan the application site (25.3ha) has been assessed alongside many other sites as to its acceptability for waste management development. Within the Pre-Submission draft RWLP the site is identified as both a Strategic Site Allocation for both *"Biological Waste Management"* and *"Other Waste Management"*;
- v. ... the principle of a waste management facility on the application site, including the physical scale of buildings, plant and stack is established due to the previous planning history, subject to the proposed amendments delivering a sustainable waste management facility and not giving rise to adverse environmental impacts;
- vi. The applicant has justified the proposed changes to the capacity of the various elements of the IWMF on the basis that the available waste is now different to that available at the time of the determination of the application;

- vii. Rivenhall is identified within the emerging Pre-Submission draft RWLP (unpublished) as a site that would be suitable for "Other Waste Management" which could include CHP/Energy from Waste. It should also be noted that one of the key underlying principles in the NPPW is for communities and businesses to engage with and take more responsibility for the waste they generate, not to send it elsewhere;
- viii. It is recognised that the input capacity of the proposed CHP is considerably in excess of the 200,000tpa of SRF/RDF to be generated by Tovi Eco Park. The remaining 395,000tpa of capacity could either utilise SRF/RDF to be made on site from C & I waste residue having passed through the MRF/MBT process and waste arising from the MDIP that cannot be recycled, or other imported SRF/RDF. This SRF/RDF could be sourced from within Essex & Southend or from elsewhere. The evidence base for the RWLP, apart from the SRF/RDF to be generated at Tovi Eco Park, has not quantified what other SRF/RDF is being produced in the county, so the data is not available as to how much recycling (as opposed to transfer) capacity exists or whether potentially SRF/RDF is being landfilled or exported from Essex.
- ix. It is recognised that the spare capacity could result in RDF being imported to the county. However, the NPPW requires WPAs to identify sites "...for new or enhanced waste management facilities in appropriate locations" and this includes "...plan for the disposal of waste and the recovery of mixed municipal waste in line with the proximity principle, recognising that new facilities will need to serve catchment areas large enough to secure the economic viability of the plant". While this refers to LACW the principle is as relevant to C & I waste which makes up a greater proportion of all waste arisings. Facilities are required to achieve the ambition of the NPPW. "...to work towards a more sustainable and efficient approach to resource use and management". RDF imported to Essex might divert RDF going overseas, helping the UK achieve net self-sufficiency for its own waste.
- x. In 2003, the European Court of Justice made two judgements that established principles to differentiate between Recovery operations and Disposal operations. To be classed as a Recovery operation the process must meet the following criteria:
 - a. The combustion of waste must generate more energy than the consumption of energy by the process itself;
The IWMF would generate enough power to run the IWMF itself with all its various waste processes, MRF, MBT, AD and CHP as well as power the MDIP and allow export of 28MW of power
 - b. The greater part of the waste must be consumed during the operation;
The CHP would utilise 595,000tpa and generate approximately 160,000tpa of ashes and residues, therefore demonstrating consuming the greater part.
 - c. The greater amount of the energy generated must be recovered and used (either as heat or electricity);
The CHP would not only generate the heat and steam to be used by the MDIP directly, but would power the facility and generate 28MW of power (including the AD facility)
 - d. The waste must replace the use of a source of primary energy.
The waste would replace a primary source of energy such as gas or coal

Against these criteria it can be seen that the CHP as part of the IWMF would provide a facility pushing waste up the waste hierarchy.

- xi. Therefore, while it recognised that the size of the CHP has increased significantly, the facility provides an opportunity for net self-sufficiency for utilisation of SRF/RDF and contribute to reducing the landfill of C&I waste and increasing the production of “green” energy. The proposals are therefore considered to be in accordance with the NPPF, NPPW and national energy policy.

In submitting the planning application(s) to simply increase the proposed height of the stack at the permitted and implemented IWMF, the need for the facility has remained unchanged and was justified through the provision of information in support of the application(s) on the 6 March 2018 “Update on the Need for the IWMF”.

The Rivenhall IWMF is strategically important to the Essex & Southend Waste Local Plan (WLP) adopted by Essex County Council (July 2017). Without the IWMF, the Plan cannot meet its objectives; this is why the site of the IWMF is safeguarded in planning terms for a 595,00 tonnes per annum CHP facility.

As a strategic site in the Adopted WLP, there is no further requirement to prove need for the facility (para 7.3):

There will be no requirement for applicants to demonstrate a quantitative or market need for a proposal on a site allocated in Policy 3; this is because they have been allocated to meet identified shortfalls in waste management capacity in order to deliver the objective of net self-sufficiency. The Authorities will keep the allocated sites under review to ensure that they are deliverable and continue to be required to meet identified shortfalls in capacity. This information will be reported annually in the Minerals and Waste Annual Monitoring Report.

The Annual Monitoring Report published by Essex County Council reported (Executive Summary) that the majority of the 22 waste management planning applications in the one year period were “for variation of conditions, rather than new/additional capacity” (the only new treatment was biological for 30ktpa) and (para 5.34) “...the plan area continues to be a net exporter of Household/Industrial/Commercial waste by 1.09 M tonnes in 2016”. The Annual Monitoring Report highlights that the Essex’s existing waste management practices do not deliver on its overriding objective of self-sufficiency.

Since 2016 there have been no new major treatment facilities permitted or constructed in Essex, apart from Rivenhall IWMF, which would positively support and contribute towards Essex’s self-sufficiency targets.

The assessment of current “estimated capacity” in Table 12 of the Annual Monitoring Report is based predominantly on stated planning permission capacities (Note 27) or where these are not stated an “assumed average capacity” is estimated. This approach is contrary to the NPPW which states (Section 3, page 4) that Waste Planning Authorities should: “consider the extent to which existing operational facilities would satisfy any identified need”; this means that the actual installed treatment capacity should be accounted for within any assessment rather than the maximum theoretical capacity (or most reasonable worst case) presented within the planning permission.

In summary the implemented IWMF planning permission will provide a waste recovery, recycling and treatment facility, fully supportive of the needs of Essex’s municipal and C&I waste streams, which will mitigate the need for its future reliance on overseas waste treatment facilities to achieve net self-sufficiency for its own waste.

2.2 UPDATE ON THE NEED FOR THE IWMF IN SUPPORT OF “SELF SUFFICIENCY”

The following information was issued to Essex County Council on the 6 March 2018 to offer an update on the need for the IWMF in support of application(s) to change the height of the stack:

The Rivenhall IWMF is strategically important to the Essex & Southend Waste Local Plan (WLP) adopted by Essex County Council (July 2017). Without the IWMF, the Plan cannot meet its objectives; this is why the site of the IWMF is safeguarded in planning terms for a 595,000 tonnes per annum CHP facility.

In the Inspector's Report on the examination in public of the WLP, it was acknowledged that, following the grant of Rivenhall's Environmental Permit, there would need to be a revision of the stack height. Nevertheless *"the planning permission has established the principle of this form of development on this site"* and the *"facility should be regarded as deliverable"*.

As a strategic site in the Adopted WLP, there is no further requirement to prove need for the facility (para 7.3). Nevertheless, there has been repeated and detailed demonstration of need in the 2008 planning permission, the 2009 Public Inquiry, the 2016 planning permission and within these current application(s) ESS/36/17/BTE and ESS/37/17/BTE.

The Rivenhall IWMF satisfies the increasing and overwhelming need to reduce the shortfall in sustainable residual waste treatment capacity, and the promotion of self-sufficiency within Essex.

Projections for total non-hazardous waste arisings within the WLP up to 2032 are in the region of 2.1 Million tonnes per annum (tpa). This comprises roughly 800,000 tpa of household waste arisings recorded as Local Authority Collected Waste (LACW) and 1.3 Million tpa of Commercial and Industrial wastes (C&I).

All residual household waste remaining after the source recovery of recyclates is intended to be treated in the Mechanical Biological Treatment (MBT) facility at Basildon's Tovi Eco Park. This has a design capacity of 415,000 tpa and commenced commissioning in November 2014. Since then, it has been widely publicised that the MBT is failing to operate in accordance with the PFI contract specification and to produce the residual output as specified. Commissioning and operational issues during 2016 resulted in the MBT treating only 275,000 tonnes of residual LACW waste, 66% of its design capacity.

Data from the Environment Agency's Waste Data Interrogator (WDI), as derived from returns by operators of regulated waste management facilities, for 2016, indicates the following waste volumes from Essex that could have been treated in the Rivenhall IWMF (as defined by the waste codes in the Environmental Permit):

- Essex Landfills (Bellhouse and Pitsea) received 843,000 tonnes;
- Of the waste landfilled, 260,000 tonnes was from Essex Districts;
- The main C&I waste operators in Essex, following recovery of recyclates, sent 330,000 tonnes for disposal by landfill or to EfW facilities outside Essex;
- Essex County Council exported 176,000 tonnes from its Basildon MBT to incineration facilities outside the County (UK and/or overseas).

It is not uncommon for MBT facilities in the UK to fail to perform as originally intended. Across the UK, other local authorities who have developed MBT facilities have experienced similar operational difficulties, with some closing key aspects of the operational process down (Manchester, Lancashire and West Sussex), while others are seeking alternative options to replace or supplement existing MBT facilities with new EfWs (Cambridgeshire).

It is clear that the IWMF can provide the much-needed capacity for Essex's 200,000 tpa RDF and 330,000 tpa C&I waste. Whilst the maximum capacity of the IWMF's Energy from Waste process (which is operated as Combined Heat and Power) is 595,000 tpa, its nominal capacity based on average calorific values is nearer 500,000 tpa.

The IWMF meets the needs of Essex and will promote "Net Self-Sufficiency" and sustainable waste treatment in accordance with the policies of the adopted Waste Local Plan.

2.3 SLR CAPACITY GAP ASSESSMENT AND JUSTIFICATION FOR THE NEED FOR THE IWMF

On the 15 May 2018, Gent Fairhead & Co Limited were advised by Essex County Council that the Waste Planning Authority felt it necessary to revisit that evidence that supported the Essex and Southend Waste Local (2017), which dated from December 2015, especially in respect of waste capacity information pertinent to the justification for the Rivenhall IWMF as now proposed. Work was commissioned by the WPA with the objective of setting out the current and future capacity needs of Non-Hazardous LACW and C&I Waste for Essex and Southend. The findings of the assessment were set out within the: Annual Monitoring Report 2016/17; Waste Needs Assessment Update – Commercial & Industrial Waste 2018; and, Non-Hazardous Waste Capacity Gap Update 2018.

Based on Gent Fairhead & Co Limited's understanding of the waste industry within and around the Essex and Southend area, which was underpinned by a number of commercial supply contracts that had been agreed in principle with a number of commercial waste operators, it was highlighted to Essex County Council that the reports contained a number of factual errors and flaws in methodology, in particular in the assessment of existing available C&I treatment capacity within Essex compared against the volume of C&I waste requiring treatment.

Subsequently, SLR Consulting Limited (SLR) were commissioned by Gent Fairhead & Co Limited to provide an independent review the Waste Needs Assessment Update – Commercial & Industrial Waste 2018 and, Non-Hazardous Waste Capacity Gap Update 2018 (prepared by BPP on Essex County Council's behalf).

The findings of the SLR report "Rivenhall IWMF – Essex Waste Need Assessment Review" are consistent with the information issued to Essex County Council on the 6 March 2018: Update on the Need for the IWMF in Support of "Self Sufficiency".

The SLR report is a detailed standalone document which provides a comprehensive review of the waste needs within Essex and should be read alongside the clarifications previously offered by Gent Fairhead and Co Limited. The findings and conclusions of the SLR report provide a standalone detailed summary of Essex's waste needs.

The findings of the SLR report are broadly summarised as:

- a) SLR found a capacity shortfall in Essex with respect to waste treatment facilities of 590,000 tonnes per annum, NOT a surplus as reported by BPP Consulting for Essex County Council in its "Non-Hazardous Waste Capacity Gap Update 2018"; the reasons for the differences are fully explained;
- b) The SLR assessment supports Gent Fairhead & Co Limited's explanation that the waste processing and treatment capacity of the IWMF (excluding recovery and recycling operations within the Pulp Plant) could potentially be taken up by Essex's C&I waste and the RDF output from Essex's municipal residual waste (LACW) from Basildon's Tovi Eco Park MBT plant;
- c) The SLR report reinforces the position that the Rivenhall IWMF could potentially make Essex "self-sufficient" by preventing the continued export of residual waste to other UK and overseas treatment facilities and its reliance on landfill as an end point for the disposal of its LACW and C&I wastes, both objectives of the Waste Local Plan; and
- d) These findings of the SLR report support Gent Fairhead & Co Limited's position that the issue of "need" should not have been re-addressed during this planning process, such a short time after Essex County Council's adoption of the Waste Local Plan and its allocation of the Rivenhall IWMF to support its Plan objectives on a site that has an implemented planning permission

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, the implemented IWMF planning permission will provide a waste recovery, recycling and treatment facility, fully supportive of the needs of Essex's municipal (LACW) and C&I waste streams, which will mitigate the need for its future reliance on overseas waste treatment facilities to achieve net self-sufficiency for its own waste.

2.4 IWMF WASTE RECOVERY, RECYCLING AND TREATMENT OPERATIONS

On the 17 April 2018 the following clarification was offered to Essex County Council to address comments offered by PAIN relating to the recovery of recyclates from the IWMF's waste treatment operations:

The MRF has a total two line processing capacity of 300,000 tpa, which includes materials that have been treated and prepared as an RDF feedstock through the MBT. Based on experience, and an understanding of the levels of recovery from collection and recycling schemes which are commercially operated across the country in the C&I sector, the MRF will receive 150,000 tpa of direct C&I waste imports for treatment and a further 150,000 tpa will be transferred from the MBT fuel preparation area. It is estimated that from these commercial residual waste streams 45,000 tpa of materials will be recovered.

The above indicates that from the residual C&I waste stream (post source separation by producers and post the initial recovery of recyclates by Essex's C&I operators) a further 15% of recyclable materials will be recovered from the residual C&I waste delivered to Rivenhall, which would ordinarily be lost, i.e. the difficult and dirty to recover materials that are normally lost from the commercial waste streams. It is important to emphasise that the MRF is not receiving and treating source separated materials, but that it is designed to recover the last recyclates from the residual commercial waste stream prior to landfill or energy recovery.

The C&I waste sector does not operate in direct comparison to the municipal (LACW) waste sector. However, if Rivenhall extracts a further 45,000 tpa from the residual C&I waste delivered to the MRF and MBT, this would equate to 15% of the residual waste delivered. By comparison, the Basildon MBT facility, based upon data from the Environment Agency's Waste Interrogator for 2016, treated 275,000 tonnes of Essex's residual municipal (LACW) waste stream (i.e. post recovery of recyclates at source) and sent to "recovery" approximately 31,000 tonnes or 11.3% of the total inputs into the facility.

In addition, it is important to note that of the total waste stream inputs to the IWMF the following recyclable materials will be recovered:

Recyclates	Tonnes per Annum (tpa)
Recycled Pulp	110,021
Compost	8,750
Recyclate from MRF	45,000
Sludge from MDIP [Recycled or Secondary Aggregates]	68,309
Bottom Ash [Recycled or Secondary Aggregates]	146,965
Total Recyclate Output	378,775

The above indicates that within the IWMF, its actual recyclable potential is 378,775 tpa which is equivalent to 45% of the total annual waste inputs to the facility. Of particular note, is the support the IWMF offers to the Minerals Supply Hierarchy through the production of secondary and recycled minerals from the IWMF's processes.

3 VIABILITY

The PAIN report states that:

After due diligence from potential financial backers was carried out, funding was withdrawn, which if the facility goes ahead, could leave Essex County Council exposed.

To address the comments offered by PAIN the following clarifications are provided in relation to PAIN's reference to an old Inframation News article and Gent Fairhead & Co Limited's intention to develop the IWMF:

3.1 INFRAMATION NEWS

On the 4 January 2017 following the Environment Agency's original decision to refuse the Environmental Permit for a stack 35m above surrounding ground level, Inframation News published an article that stated:

The financing of the Gent Fairhead energy-from-waste project in Essex is facing delays after the Environment Agency refused the scheme an environmental permit last month.

Financial investors including Aberdeen Asset Management, Equitix and John Laing are looking to back the scheme. However, the facility's failure so far to secure an environmental permit may have dampened investor appetite.

HSBC, which is advising developer Gent Fairhead on the debt raise for the circa GBP 500m scheme, is understood to have lined up lenders including Banco Sabadell, Barclays, BTMU, the GIB, and Santander.

The article referred to by PAIN is now 18 months out of date and does not reflect the current status of the financing of the IWMF project, which is now well advanced. Contracts are in place to support the delivery of the IWMF.

If anything, the Inframation News article highlights the extent and level of commercially confidential negotiations that have and continue to take place by Gent Fairhead & Co Limited to deliver the IWMF.

The current position is: Gent Fairhead & Co Limited is in confidential commercial negotiations with experienced waste operators and technology suppliers to construct and install the various waste recovery, recycling and treatment processes within the IWMF.

3.2 GENT FAIRHEAD & CO LIMITED'S INTENTION TO BUILD THE IWMF

There can be no doubt whatsoever that Gent Fairhead & Co Limited has sought for many years to develop a waste management facility at Rivenhall Airfield. They have, in so doing, incurred very considerable expenditure, which they would not have incurred unless there was an intention to develop the facility.

Development and commercial supply contracts have been prepared by its legal advisors which comprise Engineering Procurement Construction contracts to build the IWMF and install the plant and equipment and contracts relating to the supply of materials to be processed at the IWMF and the subsequent sale of the recovered and recycled materials produced.

Owners Engineers have taken a leading role in the detailed design of the IWMF and preparation of the technical and interface specifications required to deliver the IWMF. These documents have been prepared to align the construction, commissioning and operation of the IWMF to its planning permission and Environmental Permit to satisfy all planning and regulatory requirements.

Once the planning permission and Environmental Permit are aligned, Gent Fairhead & Co Limited will be in a position to move very quickly to close the financing and commence the main civil engineering construction works.

Given the commercial sensitivity of the IWMF's contractual and financing arrangements it is not surprising that their details are not publicly available. The IWMF will be developed as a merchant commercial facility without direct public supply contract(s) such as Public Finance Initiative arrangement(s) at no risk to Essex County Council. It is not standard commercial practice for any developer of private facilities to reveal confidential financial details relating to the design, development and operation of their facilities.

4 THE FLEXIBILITY OF THE IWMF

The PAIN report states that:

The flexibility of the IWMF has been compromised due to the changes in proportion (whereby incineration was increased and other processes significantly reduced) in 2016, that were permitted without consultation with the EA. Allowing the stack variation and exposing ECC to further changes that are likely to be required seriously undermines the integrity of the planning system and the validity of any conditions placed on this and other applications.

To address the comments offered by PAIN which are critical of: the existing planning permission; the flexibility of the IWMF in recovering, recycling and treating waste; the IWMF's sustainable energy production and its Combined Heat and Power accreditations; and highlights that objections have been raised by Braintree District Council when consulted on the application(s) to change the height of the IWMF's existing 7m diameter stack by 23m, the following clarifications are provided:

4.1 IMPLEMENTED PLANNING PERMISSION ESS/34/15/BTE

The current planning application(s) submitted by Gent Fairhead & Co Limited (GFC) and being considered by Essex County Council are simply to increase the proposed height of the stack at the permitted IWMF on the former Rivenhall Airfield near Kelvedon in Essex.

Planning permission for the existing and implemented IWMF (ESS/34/15/BTE) was granted on the 26 February 2016. Within Essex County Council's Development and Regulation Committee Report DR/05/16 the flexibility of the facility was fully considered when planning permission was granted:

In granting planning permission for the IWMF representatives of Essex County Council noted that the Inspector at the Public Inquiry in 2009 specifically looked at whether the facility had flexibility to respond to changing waste markets and new technologies and noted that he had stated:

Whilst each waste management process within the eRCF would benefit from its integration with others, there is sufficient capacity in each of the key processes to allow for variation thereby providing flexibility of use. Document GF/38 describes the flexibility of capacity which is inherent in each of the processes. The design of the MRF allows for upgrades in the eRCF's process which would meet potential changes in the type and composition of waste imported to the site.

And

A plant which is capable of dealing with large quantities of MSW and/or C&I waste (and in this case is combined with a specialised waste paper facility), provides considerable flexibility in terms of the type of waste that could be treated and the customers that could be served. It seems to me that such flexibility helps to maximise the economic viability of the project.

And

It seems to me that if a proposal is to be sustainable and economically viable in the long term, one of its attributes must be a degree of flexibility to accommodate future changes in waste arisings and in waste management techniques and practices.

It was highlighted that the SoS in his decision letter stated:

As for the flexibility of the proposal, the Secretary of State agrees that its design and its multiple autonomous process lines would provide a reasonable and sufficient degree of flexibility to enable future changes in the composition of waste and the ways in which waste is managed to be accommodated

Planning permission for the IWMF was granted by Essex County Council because the processes still involve pre-sorting (to remove recyclables) and pre-treatment of waste prior to its utilisation in the Combined Heat and Power Plant (CHP). The facility will still use heat, steam and energy from the CHP to power the IWMF and in particular the steam to reprocess waste paper into recycled reusable pulp.

In granting planning permission for the implemented IWMF, Essex County Council considered overall that there was integration between the different processes permitted by the SoS's decision; and concluded that the IWMF processes were flexible in the recovery, recycling and treatment of wastes and the size of the various waste management processes ensured there was flexibility for the facility to adapt to changes in technology and waste arisings.

In accordance with planning condition 29, no more than 853,000 tpa of Municipal Solid Waste and/or Commercial and Industrial Waste will be imported to the site for processing and treatment within the IWMF.

Based on the maximum permitted waste throughput of 853,000 tpa, the IWMF would recover and recycle 378,775 tpa of materials equivalent to 45% of the total annual waste input, which was confirmed to Essex County Council on the 17 April 2018 to address comments offered by PAIN relating to the recovery of recyclates from the IWMF's waste recovery, recycling and treatment operations as:

Recyclates	Tonnes per Annum (tpa)
Recycled Pulp	110,021
Compost	8,750
Recyclate from MRF	45,000
Sludge from MDIP [Recycled or Secondary Aggregates]	68,309
Bottom Ash [Recycled or Secondary Aggregates]	146,965
Total Recyclate Output	378,775

4.2 COMBINED HEAT AND POWER

The IWMF holds a Combined Heat and Power Quality Assurance Certificate from the Department for Business, Energy & Industrial Strategy. The award of the Certificate was based upon the proposals for the Pulp Plant as sized by the existing permission and confirmed that these proposals would ensure that there would be "Good Quality CHP" as defined by the Government's Certification protocols. Very few existing Energy from Waste Facilities in the UK have met this stringent examination.

Notwithstanding the above, Gent Fairhead & Co Limited has already met the criteria for "Good Quality CHP", it has stated during this planning application that it would be pleased to consider additional public use of the excess heat and steam from the process.

Condition 1.2.2 of the IWMF's Environmental Permit number EPR/FP/3335YU states:

The operator shall provide and maintain steam and/or hot water pass-outs such that opportunities for the further use of waste heat may be capitalised upon should they become practicable.

Based on the strategic cross boundary local plans that have been submitted by Braintree District Council, Colchester Borough Council and Tendring District Council, to support the potential Garden Community development proposals across North Essex, on the 27 February 2018, Gent Fairhead & Co Limited offered Essex County Council the opportunity to apply a similar obligation onto the IWMF should it be successful in gaining planning permission for the increase in stack height to align its planning permission with the Environmental Permit and proposed that the following condition or obligation that could be applied:

The operator shall provide and maintain steam and/or hot water pass-outs such that opportunities for the further use of waste heat may be capitalised upon should they become reasonably practicable.

Over and above the IWMF's direct heat and steam demand, it is estimated that an additional 10 to 20 MW of Low Pressure steam and/or hot water could be delivered from the IWMF's turbine to supply a future local district heating schemes. The precise quantities of steam and/or hot water that could be potentially provided would be finalised and confirmed through the detailed design of the turbine and position of the pass-out points.

It is estimated that future development schemes within 15km from the IWMF site could take the opportunity to promote energy efficiency within their proposals by capitalising on the use of waste heat from the IWMF's waste recovery, recycling and treatment operations.

The IWMF provides an energy efficient government accredited Combined Heat and Power plant.

4.3 BRAINTREE DISTRICT COUNCIL'S POSITION ON ESS/36/17/BTE & ESS/37/17/BTE

The PAIN report refers to representations offered by Braintree District Council which were considered by Essex County Council when granting planning permission for the implemented IWMF on the 26 February 2015. The representations presented within the PAIN report neither relate to the application(s) to change the height of the IWMF stack, nor Braintree District Council's position.

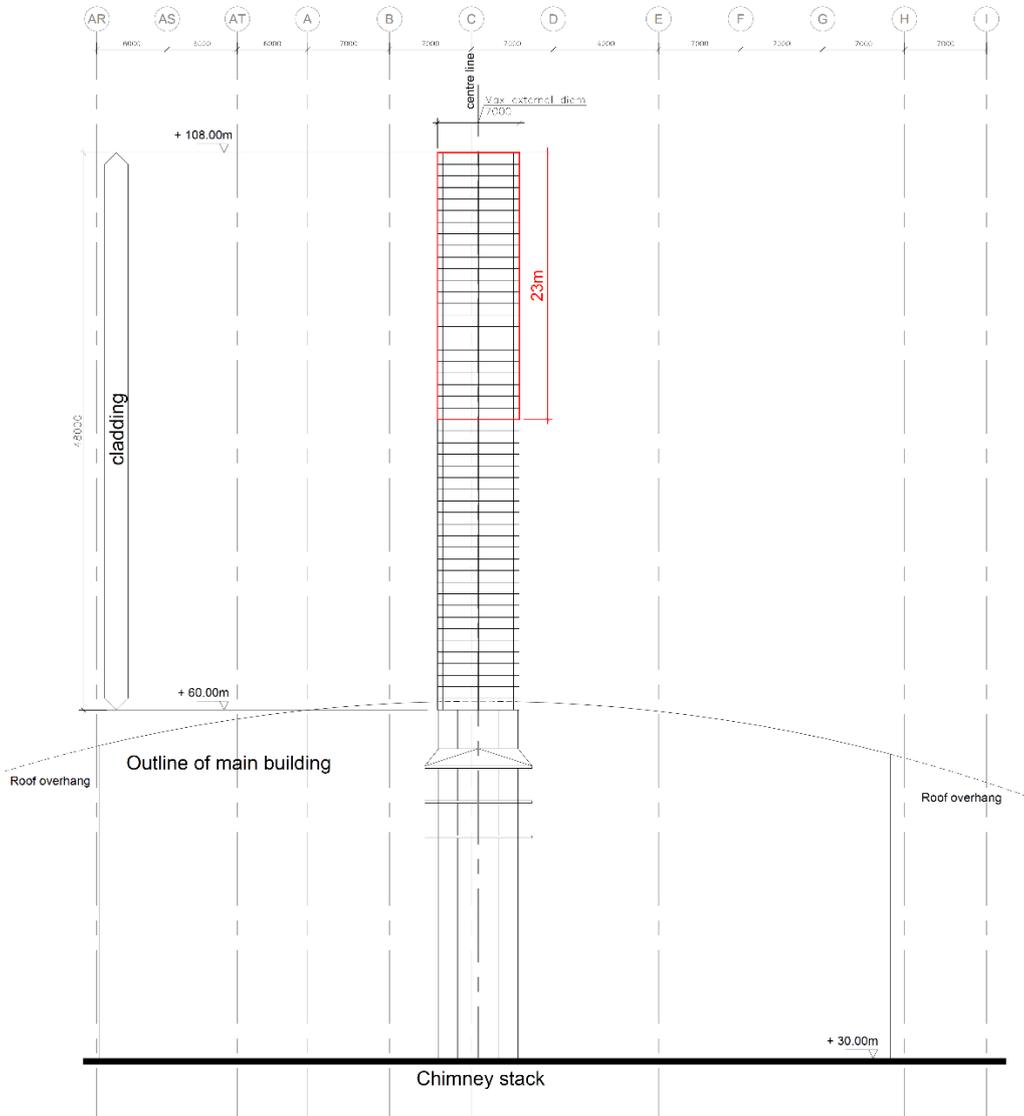
Essex County Council has consulted with representatives of Braintree District Council into the planning application(s) ESS/36/17/BTE and ESS/37/17/BTE made by Gent Fairhead & Co Limited to increase the proposed height of the stack at the permitted IWMF.

Braintree District Council is a democratic organisation. It comprises 49 elected Councillors who are responsible for agreeing policies about provision of services and how the Council's money is spent. The Council has 49 District Councillors elected in 26 wards. There are also 52 Parish Councils, 2 Town Councils and 8 County Council Divisions within the District.

With reference to planning application(s) ESS/36/17/BTE and ESS/37/17/BTE on the 1 September 2017 Braintree District Council confirmed that "*No objection is raised...*" to the application(s).

5 LANDSCAPE AND VISUAL IMPACT

The planning application(s) ESS/36/17/BTE and ESS/37/17/BTE submitted by Gent Fairhead & Co Limited to Essex County Council relate to a proposed 23m increase in the height of the 7m diameter stack at the permitted and implemented IWMF on the former Rivenhall Airfield near Kelvedon in Essex.



ELEVATION 1

The planning application(s) have been prepared to vary Condition 56 of the implemented IWMF planning permission (ESS/34/15/BTE) that limits the height of the stack, which states:

Only one stack shall be erected on the site to service all elements of the IWMF. The height of the stack shall not exceed 85 m Above Ordnance Datum.

The existing planning permission established the principle of the IWMF and the stack (85m Above Ordnance Datum (AOD), 35m above existing ground levels) within the landscape, and the revised stack height of 58 m above surrounding ground level (108 mAOD "Above Ordnance Datum") represents a variation in stack height of 23 m. The revised stack height is of a comparable height to that of the existing landmarks within the local landscape such as the nearby Sheepcotes Hangar mast and the network of high voltage overhead electricity pylons which are around 50 m above surrounding ground level (which are different forms of structure to the stack already present within the landscape).

In planning and environmental impact terms, the proposed modification in stack height is a single and subjective issue principally assessed in terms of landscape and visual impacts. Whilst no other changes are proposed to the design, layout or general arrangement of the IWMF, the variation in stack height will require modifications to permitted planning drawings and approved details previously submitted under condition which indicate the height of the stack and general arrangement of the IWMF, namely: Conditions 2 and 14.

In addition to proposing the variation to the IWMF's stack height, a change will be made to the proposed flue gas treatment techniques used within the plant; namely, from bicarbonate to lime based treatment technologies. This change has a beneficial effect in terms of emission control and represents BAT; therefore, an updated CHP Management Plan and its associated Plume Visibility Analysis are submitted to vary the plume management proposals previously approved under Condition 17.

The PAIN report states that:

The landscape and visual impact on the surrounding areas is significantly exacerbated by the nature of the Essex countryside. The flawed LVIA study ignores key receptors and has not been prepared in accordance with industry best practice guidelines: GLVIA 3. The report distorts the contribution of the stack to this landscape in terms of height and appearance. The solar glint and glare study misrepresents the reflective impact, a heritage impact study has not been provided and the applicant intends to contravene condition 17 of the 2010 Inspector's report, which specified no plume visibility.

To address the comments offered by PAIN the following clarifications are provided:

5.1 LANDSCAPE & VISUAL IMPACT ASSESSMENT

In 2009, in considering the landscape and visual impact of the proposals, the Inspector took into account a number of factors including the existing landscape character and the proximity of existing properties and PRoW. It was noted that there are only a few residential properties located in close proximity to the site. The Inspector considered the impact of the various elements of the proposal including the buildings and plant themselves, the chimney stack, the access road and the proposed lighting. The Inspector took account of the proposed mitigation, including the part sunken nature of the buildings and plant, the location of the extended access road within a cutting, the proposed green roof, proposed landscape planting, the reflective finish of the chimney and the measures proposed to minimise light pollution and said:

"In conclusion on the overall subject of the impact on the landscape, it is accepted that visual harm is inescapable in the context of the provision of a major waste management facility. However, the issue is one of degree. The degree of harm that would result in this instance is remarkably limited. The low levels of visual impact arising from such a large-scale proposal confirm that this site is ideally suited to the proposed use."

Planning permission for the existing and implemented IWMF was granted on the 26 February 2016 and permitted the construction of a 7 m diameter stack, 35m above surrounding ground level on a facility with a footprint of 5.34ha.

Within Essex County Council's Development and Regulation Committee Report DR/05/16 which noted it was noted that:

As part of the emerging Replacement Waste Local Plan the application site (25.3ha) has been assessed alongside many other sites as to its acceptability for waste management development. Within the Pre-Submission draft RWLP the site is identified as both a Strategic Site Allocation for both “Biological Waste Management” and “Other Waste Management”;

And

... the principle of a waste management facility on the application site, including the physical scale of buildings, plant and stack is established due to the previous planning history, subject to the proposed amendments delivering a sustainable waste management facility and not giving rise to adverse environmental impacts;

The overall size of the permitted IWMF structures and buildings and the location of various elements of the IWMF’s waste recovery, recycling and treatment operations is summarised below:

Structure	Dimension or Size (Permitted by ESS/34/15/BTE)
Main IWMF Buildings (or Hangars)	
Maximum length of Building	262 m
Shortest length of Building	224 m
Width at the front of the Building	204 m
Width at the rear of the Building	188 m
Roof Design	Double Arched Sedum Roof
Surrounding ground level adjacent to the IWMF	Generally 50 m AOD
Maximum height of double arched roof	60.75 mAOD
Base height at the northern end of the Building	35 mAOD
Base height at the southern end of the Building	35 mAOD and 30 mAOD
Location of MRF	Within the Buildings (or Hangars)
Location of MBT	Within the Buildings (or Hangars)
Location of Pulp Plant	Within the Buildings (or Hangars)
Location of AD Plant	Within the Buildings (or Hangars)
Location of WWTP	Within the Buildings (or Hangars)
Location of AD Gasometer	Outside at the rear of the Buildings (or Hangars)
CHP Plant	
Height of CHP Stack¹	23 m variation [increase] in stack height to 58 m above surrounding ground level (108 mAOD)
Number of Boiler Lines	2 No
Height of CHP Building	60.75 mAOD
Location of RDF Bunker	Within the Buildings (or Hangars)
Depth of RDF Bunker	18 mAOD
Retaining Walls	Earth reinforced soil nail walls around the perimeter of the Buildings (or Hangars)
Height of Access Road around the perimeter of the Buildings (or Hangars)	35 mAOD to 30 mAOD
Upper Lagoon (Operating Capacity)	25,000 m ³
New Field Lagoon (Operating Capacity)	726,000 m ³
Sheepcotes Lagoon (Temporary)	360,000 m ³

¹ Planning application to extend the CHP stack height to a maximum of 58 m above surrounding ground level (108mAOD) which represents an extension of the existing approved stack height of 23 m against Planning Condition 56 of ESS/34/15/BTE.

Capacity)	
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In granting planning permission for the existing and implemented planning permission ESS/34/15/BTE, Essex County Council confirmed that in terms of the IWMF's landscape and visual impact it was considered that there were no changes that would materially alter the original conclusions of the Inspector, namely:

"The low levels of visual impact arising from such a large-scale proposal confirm that this site is ideally suited to the proposed use."

In support of the proposed application(s) to increase in the height of the 7m diameter stack by 23m, the Landscape and Visual Impact Assessment considered a baseline setting established by the existing planning permission and the approved "low levels of visual impact".

To support the proposed change of the IWMF stack height, Hankinson Duckett Associates (HDA) reconsidered the approved Landscape and Visual Impact Assessment for the existing (and implemented) planning permission and assessed the overall impacts of raising the stack by 23 m to a revised maximum height of 58 m above surrounding ground level (108 mAOD).

The HDA assessment is presented within two reports:

- i. Rivenhall Integrated Waste Management Facility, Landscape and Visual Impact Assessment for Increased Stack Height, June 2017; and
- ii. Rivenhall Integrated Waste Management Facility, Addendum Landscape and Visual Impact Assessment for Increased Stack Height, January 2018.

The assessment(s) confirmed that the proposals to increase the height of the CHP stack by 23 m would not change the conclusions of the 2008 Landscape and Visual Impact Assessment (LVIA) or its subsequent Addendum 2018, which is supported by the preparation of additional photomontages, from a wider area and from other potentially public viewpoints, that have been prepared to demonstrate the negligible impact that the increase in the IWMF's stack height would have from distant viewpoints from the Site.

The overall visual impact of the proposed change in stack height on receptors is predicted to remain at negligible, and visual impacts would still be limited to a few residential properties, though quarrying operations now lie between these and the site of the implemented IWMF. The assessment of visual impacts has not changed, and for most receptors remains at Minor Adverse. The mitigation measures proposed, including large areas of woodland planting, will, once they mature, help to screen the building, though the CHP stack will continue to project above the surrounding tree screen. Measures to mitigate the stack's visibility will still rely on it being clad in aluminium/stainless steel (the "Optic Cloak") to reflect back changes in weather and lighting conditions in the local environment, and unlike other similar facilities in the UK, there will be no visible plume from the IWMF stack. As the tree and vegetation planting matures, this will provide improvements to the overall quality of the surrounding landscape.

The degree of change in terms of theoretical visibility was considered not to be significantly different from those already theoretically possible with the permitted stack height.

Photomontages were prepared in support of the proposed planning application(s) by HDA using industry recognised best practice and guidance. The Photomontages were prepared by three dimensional computer generated models which account for changes in the intervening topography and separation distances of the various view point(s). All view points and photomontage locations were agreed with representatives of Essex County Council.

In response to the report(s) prepared by the Landscape Partnership on PAIN's behalf, HDA were commissioned by Gent Fairhead & Co Limited to review the comments and clarify any matters that were raised.

The findings of the HDA report conclude that although some Moderate Adverse levels of significance of effect on visual receptors were assessed, this was only for a limited number of footpath users and a few residents in close proximity to the proposed stack, and only at construction and Year 1. By Year 15, no significant effects would remain.

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, the landscape and visual impacts resulting from the proposed 23m increase in the 7m diameter stack to a facility with a total operational footprint of 5.64ha within the footprint of a former quarry are not significant:

"The low levels of visual impact arising from such a large-scale proposal confirm that this site is ideally suited to the proposed use."

The IWMF is allocated as a permanent strategic site within the Waste Local Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination in Public) of the IWMF proposals, which are supportive of Essex's principle aim of "Net Self-Sufficiency".

The Examination In Public of the Waste Local Plan was held between the 27 September 2016 and 7 October 2016, and the Inspector was made aware of representations submitted by members of PAIN to the Environment Agency (when considering the first Environmental Permit application for a stack of 35 m above surrounding ground level) requesting that the IWMF stack should be increased in height. In addition, the Examination in Public took place following Essex County Council's comments to the Environment Agency in consultation to the first Environmental Permit application.

Within her report on the examination into the Replacement Waste Local Plan, the Inspector concluded in paragraph 54:

Although there was strong opposition to this allocation, the grant of planning permission has established the principle of this form of development on this site. It is also a firm indication that the waste management capacity is likely to be delivered during the lifetime of the RWLP. I understand that further work will be required as a result of the Environmental Permitting process, including a revision to the design in relation to the height of the stack. The fact that an Environmental Permit is being pursued supports the case that the facility should be regarded as deliverable. Although other concerns were raised, including the detailed arrangements between this facility and the Tovi Eco Park or the extent to which it might actually function as a combined heat and power facility, these do not alter the appropriateness of the site for the allocated waste management uses.

5.2 HERITAGE IMPACT

In support of the proposed application(s) a Heritage Statement (i.e. Impact Assessment) was prepared by Archaeology South-East (a division of the Centre for Applied Archaeology University College London) which focused on setting issues relating to nearby designated heritage assets. It was completed in line with the requirements of the National Planning Policy Framework (2012) and relevant national guidance, particularly The Setting of Heritage Assets. Historic Environment Good Practice Advice in Planning: 3 (Historic England 2015). The scope of the heritage assessment was agreed with Essex County Council and is set out within their Scoping Opinion.

In considering the impact of the 23m change in stack height on the setting of heritage assets it is important to understand that 'setting' has no intrinsic importance in itself but rather it has a value only to the extent to which it contributes to the significance of the heritage asset in question. A proposed development does not necessarily have to be visible from a heritage asset (or vice-versa) to affect its setting or significance; conversely, a development can be visible from a heritage without affecting its significance. The Landscape and Visual Impact Assessment(s) consider issues such as landscape character and views.

A total of 105 Designated Heritage Assets have been identified within a 3km Study Area, the majority of which lie over 1km away from the IWMF, which included (but were not limited to):

- i. Woodhouse Farm; Allshot's Farmhouse and Allshot's Barn; and, Sheepcotes Farm which are within 1 km of the stack;
- ii. Silver End Conservation Area; Bradwell Church and Bradwell Hall; and, Rivenhall Place which are between 1km and 2km of the stack;
- iii. Crossing Temple; and, historic assets within Coggeshall (including The Grange Barn) which are between 2km and 3km of the stack.

The importance of the designated heritage assets within the study area can be seen to largely derive from the following factors; their age (survival), associations as groups of assets and architectural value. Many of the assets are working farmsteads so the relationship with the landscape is less specific/more generic than it would be if they were part of a designed landscape. The wider rural setting is acknowledged as being visually appealing but does not particularly contribute to the significance of the heritage assets; i.e., the character of the landscape is incidental to the significance of the assets rather than integral to it. Accordingly, impacts have been identified as Neutral/Negligible to Slight Adverse.

The Zone of Theoretical Visibility for a 35m stack (as permitted) and the proposed modification to 58m only brings an additional three heritage assets into the ZTV illustrating that the degree of change is not significant. Accordingly, the likely effects of a 35m or 58m stack on the designated heritage assets is considered to be largely the same, thus the change in impact is Neutral.

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, the heritage impacts resulting from the proposed 23m increase in the 7m diameter stack are as Neutral/Negligible to Slight Adverse. This is in line with the Inspector's comments within Essex County Council's Development and Regulation Committee Report DR/05/16 which noted:

"The low levels of visual impact arising from such a large-scale proposal confirm that this site is ideally suited to the proposed use."

The IWMF is allocated as a permanent strategic site within the Waste Local Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination in Public) of the IWMF proposals.

Within her report on the examination into the Replacement Waste Local Plan, the Inspector concluded in paragraph 54:

Although there was strong opposition to this allocation, the grant of planning permission has established the principle of this form of development on this site... I understand that further work will be required as a result of the Environmental Permitting process, including a revision to the design in relation to the height of the stack ... these do not alter the appropriateness of the site for the allocated waste management uses.

5.3 SOLAR GLINT AND GLARE

Where the IWMF's stack extends above the surrounding woodland it will be clad in aluminium/stainless steel to reflect and mirror the surrounding environment and visually cloak its appearance as unobtrusive as possible.

The use of reflective cladding to the IWMF's stack was approved by Essex County Council when granting planning permission on the 26 February 2018. To support the proposed 23m change in stack height Pager Power were commissioned to assess the possible effects of glint and glare from the IWMF's reflective stack cladding from the existing permitted 35m stack, and the proposed 23m increase in stack height to 58m above surrounding ground level.

The assessment confirmed that the reflective cladding to the permitted 35m stack does not have significant impacts associated with glint and glare within the local environment. The proposed 23m increase in height to construct a 58m stack does not significantly increase the potential for impacts of glint and glare from the stack. The change in terms of glint and glare is not significant.

The use of the reflective cladding will not result in significant glare or glint impacts within the local environment. The stack's convex surface reduces glint and glare impacts at the point of reflective source and the intensity of its reflection reduces with distance.

The assessment was conservative in its approach and the model did not consider the azimuth angle, only the Sun's elevation angle range throughout a year². In addition, screening features within the landscape or the effect of cloud cover that may screen the stack from view of the Sun or reduce the Sun's intensity were not considered. The geometric assessment analysis was therefore conservative in its approach yet robust. The analysis indicated that the duration of a solar reflection would increase for the proposed taller stack when compared to the permitted smaller stack. The increase per day per receptor, on average, is 13 minutes.

Whilst the proposed stack is taller than the permitted stack, the reflector characteristics remain the same and do not change significantly with height. Therefore, the solar reflection characteristics are not significantly different when comparing the permitted and proposed stacks i.e. the intensity of any solar reflection remains the same for the 35m and proposed 58m stack.

Modelling a worst-case scenario considering a perfect mirrored reflection on the convex stack, the Sun directly behind the receptor and a Sun at maximum intensity, the intensity of a solar reflection would result in a reflection less than 1/100 times the size of the Sun horizontally with a retinal irradiance of 8W/cm². This gives an overall glare intensity rating of "green" which means there is 'low potential for temporary after-image'³. This is the lowest categorisation of glare intensity as outlined within Federal Aviation Administration (FAA) guidance on solar glare from solar panels, and would be acceptable towards pilots on the approach path to a runway.

No allowance was made within the assessment for changes in weather conditions, i.e. cloud cover of any kind, and analyses demonstrated that the duration of a solar reflection would increase per day per receptor on average of only 13 minutes, for the proposed 23m increase in stack height (in comparison to the existing 35m stack).

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, the impacts resulting from the proposed 23m increase in the 7m diameter stack, the proposed cladding and the proposed increase in stack height, no significant impact is expected beyond those already expected for the permitted stack:

"The low levels of visual impact arising from such a large-scale proposal confirm that this site is ideally suited to the proposed use."

5.4 PLUME VISIBILITY

Planning permission for the existing and implemented IWMF was granted on the 26 February 2016. Within Essex County Council's Development and Regulation Committee Report DR/05/16 it was noted that:

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- ² The sun is therefore modelled as being located directly behind a receptor.
 - ³ Federal Aviation Administration Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports, 2013.

The County's air quality consultant has reviewed the measures to prevent a visual plume from the stack, namely the removal of water vapour from the emissions and has concluded that the proposed measures would ensure under the majority of circumstances with no visual plume. The air quality consultant requested a management plan which would allow review the management techniques should there be any occurrences of a visual plume and a suitable management plan has been submitted by the applicant. It is therefore considered condition 17 (plume management) can be discharged.

Planning Condition 17 of ESS/43/15/BTE states:

The development hereby permitted shall be implemented in accordance with the details submitted with respect to the management plan for the CHP plant to ensure there is no visible plume from the stack. The approved details include: the application for approval of details reserved by condition dated 4 August 2015 and documents referenced:

- S1552-0700-0008RSF entitled "CHP Management Plan for Plume Abatement" Issue no. 5 dated 16/02/16 by Fichtner;
- S1552-0700-0013RSF entitled "Plume Visibility Analysis" both by Fichtner.

The development shall be implemented in accordance with the approved details.

In assessing the variation in the IWMF's stack height a change has been to the proposed flue gas treatment materials and techniques used within the plant, namely, a change from bicarbonate to lime based treatment technologies.

The updated CHP Management Plan and Plume Visibility Analysis submitted in support of the application(s) concluded that:

The approved CHP Management Plan for Plume Abatement concluded that following the implementation of the proposed heating regimes there was a low chance of residual plumes occurring. The following table presents the conditions in which residual plumes may occur following the final stage heating for the consented scheme and that predicted for the lime based system.

Table 5.1: Ambient conditions in which residual plumes may occur following heating to 260°C

	Approved Scheme		Proposed Scheme (lime based FGT system and 58m stack)	
	>0% chance of occurring	>50% chance of occurring	>0% chance of occurring	>50% chance of occurring
Temp <	-1°C	-9°C	-2°C	-11°C
Wind speed <	5 m/s	3 m/s	2 m/s	2 m/s
Relative humidity >	83%	83%	83%	83%
Number of hours over 5 years these conditions occur	965	15	333	12
% of time these conditions occur	2.20%	0.03%	0.9%	0.03%
Number of plumes predicted to occur during these conditions	23	8	9	6

As shown the residual number of visible plumes using lime based flue gas treatment system is lower than those originally predicted (and approved) to occur using sodium bicarbonate within the CHP Management Plan.

Therefore, the proposed change to a lime based flue gas treatment system, and increase in stack height, will result in fewer residual plumes than the currently approved IWMF scheme. The operational control measures that are already approved in the CHP Management Plan have been revised to ensure they reflect the change to a lime based flue gas treatment system.

In considering the application(s) to increase the height of the stack by 23m, Essex County Council has acknowledged that there is only a visible plume 0.02% of the time, and in response to a request for clarification relating to when the plume may be visible and its extent the following response was offered on the 8 September 2018:

The plume visibility modelling indicates that following the operation of the management techniques described in the Management Plan for Plume Abatement, visible plumes were only predicted for nine hours and it is noticeable that six of these were on one day, a seventh was on the following day and only three in total occurred during daylight hours. This was over a total of five years of data.

Visible length (m)	Plume height where last visible (AOD)	Plume height where last visible (above top of stack)	Date	Hour	Daylight?	Temp (°C)	Wind Speed (m/s)	Cloud cover (octas)	Relative humidity (%)
36.25	163.62	55.62	16/12/2010	11	Yes	-3	3.6	4	91.9
28.95	157.9	49.9	19/12/2010	7	No	-12	1.5	0	91.3
20.13	151.58	43.58	11/02/2012	4	No	-11	1	0	91.4
8.4	143.91	35.91	11/02/2012	5	No	-13	1	0	83.3
28.95	157.9	49.9	11/02/2012	6	No	-14	1.5	0	83.1
8.76	133.29	25.29	11/02/2012	7	No	-12	1.5	2	91.3
21.97	200.46	92.46	11/02/2012	10	Yes	-8	1.5	0	91.6
68.05	218.03	110.03	11/02/2012	11	Yes	-3	3.1	0	84.4
3.75	165.93	57.93	12/02/2012	2	No	-8	1	0	91.6

As shown the main residual plume was predicted to occur during extremely cold temperatures, with very low wind speeds and clear sky and relatively high humidity levels. The maximum length of any plume is predicted to be <70m with the maximum height at which the plume is last visible up to 110m above the top of the stack, or up to 218m AOD. The Environment Agency IPPC H1 document provides criteria for determining the significance of the number of visible plumes from an installation. This indicates that the plume would be considered "insignificant". Additional reference should be made to Table 6.2 within the Plume Visibility Analysis.

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, the application of a CHP Management Plan for the CHP plant will ensure there is no visible plume from the stack.

5.5 STACK HEIGHT DESIGN DETAILS

Planning Condition 14 of ESS/43/15/BTE states:

The development hereby permitted shall be implemented in accordance with the details submitted with respect to the design and maintenance of the stack. The approved details include: the application for approval of details reserved by condition dated 4 August 2015 and the following drawings and specifications:

Drawing Ref.	Title	Dated
LA01A	Chimney stack top cladding details plan & elevations	23/07/15
LA02A	Chimney stack top cladding details fixing details	23/07/15
	Alucobond reflect- technical data sheet	
	Alucobond – cleaning & maintenance of stove-lacquered surfaces	
	Genie – Self-propelled telescopic booms - features	

The stack shall be constructed and maintained in accordance with the approved details throughout the life of the IWMF

In assessing the variation in the IWMF's stack height the drawings previously submitted and approved against Condition 14 were modified to reflect the proposed variation in the height of the IWMF stack, and the typical details associated with the self-propelled telescopic booms which would be used to maintain the exterior of the stack were updated.

Notwithstanding the above, it should be noted that the previously submitted and approved cleaning and maintenance proposals and type of reflective cladding (ALUCOBOND reflect) remains unchanged.

The updated details presented against Condition 14 were intended to modify the previously approved details submitted with respect to the design and maintenance of the IWMF stack. The modified drawings and details simply relate to the proposed variation in height of the IWMF stack.

Condition 14 originally required details of the design of the IWMF stack to be submitted and approved, by the Waste Planning Authority. This information included:

- a. elevations, sections and plan views to appropriate scales and construction details;
- b. samples of the finish of the stack to provide a mirrored reflective surface; and
- c. information on the effect of weathering on the proposed stack material or how the effect of weathering is to be assessed by, for example the location on the site of examples of proposed materials which will be exposed to the elements and details of how the stack would be maintained to retain the quality of the surface of these materials.

The modification in stack height simply increases the height and use of the approved materials. The diameter of the stack remains unchanged at 7m in diameter, however the height of the stack has been increased by 23 m. The IWMF stack will be 58m above surrounding ground level at an elevation of 108 mAOD.

The stack will be designed and constructed in accordance with relevant British and European standards. Design elevations, sections, plan views and general construction details have been prepared to support the proposed variation in stack height. The IWMF stack will be structurally stable.

The reflective cladding will be weather resistant and maintained (or cleaned) on an annual basis.

The following information was submitted to vary Condition 14 of ESS/34/15/BTE.

SOD Ref.	Drawing Ref.	Title	Dated	Author
C14.1 [A]	LA01B	Chimney stack top cladding details plan & elevations Scale 1:250 @A1 and 1:500 @A3	15/02/17	Arctica
C14.2 [A]	LA02B	Chimney stack top cladding details fixing details 1:250 @A1 and 1:500 @A3	15/02/17	Arctica
C14.3 [A]		ALUCOBOND Reflect Data Sheet		Alucobond
C14.4 [A]		ALUCOBOND Cleaning and Maintenance		Alucobond

C14.5 [A]		High Safe Solutions WT 1000 Mobile Crane Specification		High Safe Solutions
C14.6 [A]		Rivenhall IWMF - proposed increase in stack height		Fichtner
		Samples:		
		ALCOBOND naturAL REFLECT 405 x 1		Alucobond

The above confirms the proposed management and maintenance proposals of the reflective stack that will be implemented at the at the IWMF, in line with its existing planning permission.

6 THE RISK TO HUMAN HEALTH

The height of the stack currently permitted at the site is 85m AOD or 35m above surrounding ground level.

An Environmental Permit is needed to operate the IWMF. On the 21 December 2016, the Environment Agency issued a refusal notice against the first Environmental Permit Application that had been submitted by Gent Fairhead & Co Limited for the stack height of 85m AOD or 35m above surrounding ground level. The reason for the Environment Agency's refusal was given as follows:

"Based on the information that has been provided to us, we are not satisfied that you [the Applicant] have demonstrated that the proposals reduce emissions and their impact on the environment through the use of Best Available Techniques (BAT) and in particular that the proposed stack height is BAT"

Within the original Environmental Permit Application, Gent Fairhead & Co Limited proposed a daily NO₂ emission limit of 150 mg/Nm³ which would have been the most stringent emission limit in the UK at a conventional Energy from Waste plant, and the associated air quality impact on the local environment using the latest 2016 guidance and screening criteria would have been "insignificant". The approach of limiting NO₂ emissions at source, rather than increasing the height of the stack within the local landscape, aimed to deliver the preferred solution to abatement and emissions as reported by the Planning Inspector at the time of the public inquiry (paragraph 13.89):

'... a dilute and disperse approach by using a taller stack is one of the least preferred methods for controlling the impact of industrial emissions. Preference is given to abatement and the reduction of emissions at source. The applicants submit that the CHP plant could operate at substantially more stringent emission limits, thereby providing an alternative option for reducing the impact of the plant on local air quality.'

In its assessment of GFC's first Environmental Permit Application (duly made 15 November 2015 and refused 20 December 2016), the Environment Agency's Air Quality Modelling & Assessment Unit (AQMAU) considered the impacts associated with emissions from the IWMF stack at a height of 35 m above surrounding ground level (85 mAOD) on air quality, habitats and human health and concluded:

- *We [AQMAU] agree that the facility [IWMF] is unlikely to contribute to exceedances of air quality Environmental Quality standard (EQS) for human health*
- *We [AQMAU] agree with Fichtner's [GFC's] conclusions on ecological impacts*
- *With respect to their HHRA, we agree with Fichtner's [GFC's] conclusion that the facility would not result in any exceedance of the COT-TDI (Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment – Tolerable Daily Intake).*

In providing its reasons for refusal the Environment Agency's highlighted that the IWMF would meet recommended standards, but the Agency believed that if the stack was increased in height it would reduce the emissions impacts even further. By increasing the height of the stack, the Agency suggested the IWMF proposals would incorporate Best Available Techniques, even though the proposed emissions limits from the IWMF would have been the most stringent in the UK for an Energy from Waste facility and would have tackled emissions at the point of source rather than reducing them by increasing the height of the stack.

Within the Environment Agency's decision report, it is noted that on the 21 September 2016 the Agency consulted with Essex County Council to seek their views on the status of the implemented planning permission ESS/34/15/BTE and views on any proposed changes to the extant permission. Through consultation Essex County Council confirmed: "any changes to the proposal would trigger a requirement for a variation application to the current planning consent"

Having considered the Environment Agency's detailed decision report and the reported consultation response offered by Essex County Council; on the 3 March 2017, a second (revised) Environmental Permit application was submitted to the Environment Agency.

On the 11 September 2017 the Environment Agency issued Environmental Permit EPR/FPP3335YU/A001.

An Addendum Air Quality Assessment (Significance of Air Quality Effects), Air Dispersion Modelling Assessment and Human Health Risk Assessment were submitted in support of the planning application(s) to increase the height of the IWMF's stack by 23 m. These reports were consistent with those assessed by the Environment Agency when issuing Environmental Permit EPR/FPP3335YU/A001.

The PAIN report states that:

ECC has a statutory obligation regarding the health and wellbeing of individuals who live in Essex. There have been numerous reports confirming the adverse effects that poor air quality and high levels of air pollution (such as those recorded in Braintree) have on health, particularly on that of vulnerable groups such as the young and elderly. There is no evidence that ECC is taking any action to mitigate the effects of the facility or even recognise its contribution to air pollution, which is a failure of its duty as a public health authority.

There is significant latency between the applied EA standards and current understanding of the impacts of air pollution, air quality and small particles with regard to asthma, dementia and other serious conditions.

To address the comments offered by PAIN which are critical of the emissions assessment(s) that have been completed in support of the planning application(s) and the Environmental Permit, the following comments are offered:

6.1 THE RISK TO HUMAN HEALTH

The following conclusions have been drawn from this Addendum Human Health Risk Assessment Report that also formed part of the final Environmental Permit No EPR/FP3335YU package issued by the Environment Agency (i.e. its results and conclusions have been effectively reviewed and validated).

The impact of air quality on human health has been assessed using a standard industry recognised approach.

- a) The Environment Agency has stated that the contribution to air quality can be screened out as 'insignificant' if the short term contribution is less than 10% of the AQAL and the long term contribution is less than 1% of the AQAL. These screening criteria have been applied initially.
- b) For those pollutants which are not screened out, the background concentration has been reviewed to see if there is any potential for any exceedances of an assessment level.

The assessment confirms that the proposals to increase the height of the CHP stack by 23 m would result in the impact of many pollutants on human health being screened out as 'insignificant'. For those which cannot be screened out, the background concentrations are low and there is little chance of significant pollution.

The Environment Agency approach to assessing the impact of metals has been used which considers the risk of exceeding the AQAL based on the existing background levels and contribution from the Facility. Using this approach there is no risk of exceeding the AQAL.

The comprehensive assessment of the impact of the proposed IWMF on human health has shown that the proposed increase in the IWMF's stack height would not have a significant impact on local air quality, the general population or the local community.

Of all the pollutants considered with a Tolerable Daily Intake (TDI), nickel is the pollutant that results in the highest level of existing exposure (MDI). The combined impact of nickel from existing background sources and contributions from the IWMF at the point of maximum impact is 177.14% of the ingestion TDI for children. However, the process contribution from the IWMF for nickel is exceptionally small, being only 0.24% of the TDI at the point of maximum impact, and 0.20% or less at receptors. This is based on the worst-case assumption that emissions of nickel are 44% of the group Emission Limit Value (ELV). The analysis by the Environment Agency states that this is an outlier, the monitoring data shows that this was for a single facility, the third highest concentration was 11% of the ELV. If it is assumed that emissions of nickel are 11% of the group ELV the impact is less than 1% of the TDI for ingestion at the point of maximum impact for an agricultural child receptor. On this basis, the IWMF would not increase the health risks from nickel for children significantly. Similarly, the ingestion of cadmium and chromium from existing background sources and contributions from the IWMF also exceeds the ingestion TDI for children. However, the process contribution from the proposed IWMF for cadmium is again exceptionally small, being only 0.19% of the TDI at the point of maximum impact for an agricultural receptor, and 0.16% or less at actual receptors. The process contribution for chromium is again exceptionally small, being only 0.34% of the TDI at the point of maximum impact, and 0.27% or less at receptors.

The TDI is set at a level "that can be ingested daily over a lifetime without appreciable health risk". The ingestion of cadmium and chromium by children as a result of background sources is already above the TDI. On the basis that the process contribution of these substances is exceptionally small, the IWMF would not increase the health risks from this pollutant significantly. For all other pollutants, the combined impact from the IWMF plus the existing MDI is below the TDI, so there would not be an appreciable health risk based on the emission of these pollutants.

Although the MDI exceeds the cadmium TDI for children, the Environment Agency explains that chronic exposure to levels in excess of the TDI might be associated with an increase in kidney disease in a proportion of those exposed, but (small) exceedances lasting for shorter periods are of less consequence. Therefore, assessing a lifetime exposure is appropriate. If we assess the exposure over the lifetime (i.e. a period as a child and adult) the overall impact of the IWMF is well below the TDI, so there would not be an appreciable health risk based on the emission of cadmium.

Again, the TDI for chromium for children is predicted to be exceeded due to existing dietary intake. Toxicological opinion is that chromium III is of low oral toxicity and is needed as part of a healthy diet. The UK Committee on Medical Aspects of Food Policy recommend a minimum safe and adequate intake, but do not restrict an upper limit. The World Health Organisation (WHO) have analysed human intake for chromium through food and conclude that existing levels do not represent a toxicity problem. The TDI is based on the USEPA's Reference Dose for chromium IV. Assessing the total dietary intake of chromium against this TDI is highly conservative. Therefore, it is concluded that as the process contribution is so small and the TDI is set at a highly conservative level there would not be an appreciable health risk based on the emission of chromium.

For pollutants which do not have a TDI, a comparison has been made against an Index Dose (ID). The ID is a threshold below which there are considered to be negligible risks to human health. The greatest contribution from the IWMF is from chromium (VI), which is only 11.48% of the Index Dose for children at the point of maximum impact. Therefore, emissions from the IWMF of chromium (VI) and all other pollutants are considered to have a negligible impact on human health.

In conclusion, the IWMF will not result in appreciable health risks resulting from its operation. This is the same conclusion reached in the original human health risk assessment(s) completed by Golder Associates (UK) Ltd. This confirms that the design modifications that have been made to the IWMF since then have not changed the overall health risks resulting from its operation.

The comprehensive assessment of the impact of the proposed IWMF on human health has shown that the proposed increase in the IWMF's stack height would not have a significant impact on local air quality, the general population or the local community.

The emissions from the IWMF will be subject to the most heavily regulated and stringent standards within UK and Europe. Public Health England has said that modern Energy from Waste Facilities (such as the IWMF) do not pose a significant risk to public health and make only a small contribution to air pollution. Monitoring and reporting of emissions from the IWMF will be stringent and robust, and are a legal requirement associated with its operation and Environmental Permit.

The modelling presented by PAIN within their report, and their conclusions relating to the potential air quality and human health impacts is flawed, inaccurate and misleading. The analysis takes the peak 1-hour concentration and compares this to the annual mean assessment level.

The air quality assessment submitted in support of the application(s) takes the peak 1-hour concentration from five years of data, as opposed to the single year considered by PAIN, and correctly compares this to the relevant short term assessment level..

Scientists at the Environment Agency's Air Quality Modelling & Assessment Unit (AQMAU) have reviewed all air quality and human health impact assessments submitted in support of the proposed IWMF application(s) and concluded that the facility does not pose a risk to the local environment or the health and well being of nearby and distant residents.

6.2 PARTICLES

The Addendum Air Quality Assessment (Significance of Air Quality Effects), Air Dispersion Modelling Assessment and Human Health Risk Assessment have considered the impacts associated with particles. Within the models, which reviewed and approved by the Environment Agency's Air Quality Modelling & Assessment Unit, a worst-case was assumed that the entire particulate PM emissions consisted of either PM₁₀ or PM_{2.5} for comparison with the relevant Air Quality Assessment Levels.

The effects of PM_{2.5} were demonstrated to be negligible.

6.3 ENVIRONMENT AGENCY PERMIT EPR/FPP3335YU/A001 DECISION SUMMARY

In issuing the IWMF's Environmental Permit the Environment Agency presented its decision summary relating to the potential impacts of the IWMF on human health and local air quality, which states:

As part of our decision making process, we have thoroughly checked the air quality and human health impact modelling assessments provided within the company's permit application. We have also undertaken a rigorous sensitivity analysis of these assessments including the effect of local topography and the proximity of buildings on the dispersion of pollutants (i.e. using a range of different input parameters within the modelling). Our conclusion is that we consider the proposed facility is unlikely to contribute to any breach of the relevant air quality standards for human health and the environment.

It is important to note that we reached the same conclusion as this for the company's first permit application which we refused on the basis of a stack height of 35 meters (above surrounding ground level). This means that even with a stack height of 35 meters we were satisfied that no air quality or human health thresholds would have been exceeded for the proposed incinerator. However, in addition to meeting all the required air quality and human health standards, permit applicants must also demonstrate to us how they intend to minimise the impact of their emissions on the environment by applying BAT. We believe that the design of the proposed incinerator is now such that pollutant emissions to air will be minimised.

A number of respondents to our recent public consultation raised concerns in relation to the health impact of fine particulates. For the proposed design and operation of the incinerator plant, we believe that emissions of particulate matter (PM10 and PM2.5) have been demonstrated to be insignificant. The operator proposes to use bag or fabric filters for the abatement of particulate matter. Bag filters are effective at removing at least 99.9% of all particle sizes and are widely used across Europe for controlling particulate emissions from incineration plants.

We believe that we have considered all the relevant factors, including all public consultation responses, and have reached the conclusion that the incinerator proposals will not give rise to any significant pollution of the environment or harm to human health. Our conclusion is in line with current advice from Public Health England which states "while it is not possible to rule out adverse health effects from modern, well-regulated municipal waste incinerators with complete certainty, any potential damage to the health of those living close-by is likely to be very small, if detectable". We are confident that the stringent controls imposed by UK and European legislation coupled with effective day to day regulation will safeguard human health in the locality of the facility.

the Environment Agency's Air Quality Modelling & Assessment Unit (AQMAU) have reviewed all air quality and human health impact assessments submitted in support of the proposed IWMF application(s) and concluded that the facility does not pose a risk to the local environment or the health and wellbeing of nearby and distant residents.

7 CO₂

The PAIN report states that:

Minimal consideration has been given to the impact on climate change with the facility producing approximately 600,000 TPA of CO₂ plus the significant emissions associated with transporting this amount of fuel to the facility. There is now a duty for councils to consider sustainable and climate friendly developments and the changes in capacities move the IWMF down the waste hierarchy, into "disposal to atmosphere"

The IWMF recovers, recycles and treats waste materials and produces and its CHPQA accredited Combined Heat and Power plant will produce low-carbon electricity and heat which could support the development of low-carbon local heat networks, as recommended by the UK Government's: The Clean Growth Strategy.

The treatment of waste through the IWMF's Combined Heat and Power plant would save 200kg CO₂e per tonne of waste diverted from landfill.

A WRATE assessment was completed for the original IWMF planning application which considered the holistic impact of the facility which included direct and indirect emissions (construction, transport, disposal of residues, etc.). This reported annual savings of greater than 120,000 tonnes of carbon dioxide emissions compared to existing waste management arrangements.

The planning application(s) are simply to increase the proposed height of the stack at the permitted IWMF, there are no changes to the proposed transport arrangements or waste recovery, recycling and treatment operations.

Planning permission for the existing and implemented IWMF (ESS/34/15/BTE) was granted on the 26 February 2016. Within Essex County Council's Development and Regulation Committee Report DR/05/16 the positive contribution the IWMF would make to the low-carbon economy was fully considered when planning permission was granted:

One of the government's overarching aims is to provide energy security. The increased generating capacity of the IWMF would contribute towards energy security, through residual waste treatment, lessening the dependency on imported fossil fuels for energy generation, providing the diversification the Government seeks on energy generation, moving away from the reliance on just the traditional fuels of coal, gas and nuclear.

The NPPF actively encourages any energy development, stating under Paragraph 98 *"that when determining planning applications, local planning authorities should not require applicants for energy development to demonstrate the overall need for renewable or low carbon energy and also recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and approve the application if its impacts are (or can be made) acceptable."*

The National Policy Statement (NPS) for Renewable Energy Infrastructure (EN-3) 2011 states that the *"recovery of energy from the combustion of waste, where in accordance with the waste hierarchy, will play an increasingly important role in meeting the UK's energy needs. Where the waste burned is deemed renewable, this can also contribute to meeting the UK's renewable energy targets. Further, the recovery of energy from the combustion of waste forms an important element of waste management strategies in both England and Wales."*

The increased element of exported electricity is considered in accordance with the Government objectives for the provision of energy from waste.

In addition to the above, Paragraph 154 of the Revised National Planning Policy Framework states that:

"When determining planning applications for renewable and low carbon development, local planning authorities should:

- a) *not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and*
- b) *approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas."*

In line with the existing and implemented planning permission the IWMF will substantially reduce CO₂ emissions through a facility that is flexible and meets the needs of modern waste treatment compared to existing waste management practices within and around Essex.

8 THE IMPACT ON HABITATS AND WILDLIFE

The PAIN report states that:

New evidence suggests that air pollution has a significant impact on flora and fauna. The environmental statement does not comply with National Planning Policy Framework paragraph 120: the applicant should provide a comprehensive EIA assessment.

The impact of air quality on ecosystems of the revised stack height has been assessed using a standard industry recognised approach.

- a) The Environment Agency has stated that, if the contribution within an entire protected site is less than 1% of the long-term and less than 10% of the short term benchmark, the emissions are not significant and it can be concluded no likely significant effect either alone and in-combination with other sources of pollutants, irrespective of background levels.
- b) If the process contribution at European and UK designated sites is greater than 1% of the relevant long-term, or 10% of the short term benchmark, but the total predicted concentration including background levels is less than 70% of the relevant benchmark, the Environment Agency has stated that the emissions are not likely to have a significant effect.
- c) If the process contribution at locally designated sites is less than the relevant benchmark, the Environment Agency has stated that the emissions are not likely to have a significant effect.

The impact of the deposition of nitrogen and acid gases on sensitive habitats has been assessed using a standard approach.

- a) It has been assumed that all items of plant operate at the emission limits for the entire year whereas actual operational emission concentrations will be lower and the plant will be offline for maintenance purposes.
- b) It has been assumed that all habitats are present at the point of greatest impact.
- c) The impact has been calculated based on the maximum predicted concentration over a 5-year period at each ecological site and applying conservative deposition assumptions from the Environment Agency.
- d) The results have been compared to habitat specific Critical Loads.

No European or UK designated site were identified as requiring consideration within the air quality assessment.

A number of non-statutory designated sites have been identified within 2km of the IWMF. An assessment, based on broad habitat types, has concluded that the impact of emissions on these sites is not significant. This conclusion has been drawn because the Process Contribution is less than 100% of the Critical Level or Load.

The comprehensive assessment of the impact of the proposed IWMF on the air quality environment has shown that the proposed increase in the IWMF's stack height would not have a significant impact on local air quality, the general population or the local environment.

The assessment considered the total impact of the IWMF proposals i.e. emissions from a stack constructed to a height of 58 m above surrounding ground level (108 mAOD) on the local environment rather than the change from the approved and implemented planning permission, in accordance with the Institute of Air Quality Management (2017) methodology.

The proposed change in the flue gas treatment system from sodium bicarbonate to lime, and the increase in stack height from 35 m above surrounding natural ground level (85 mAOD) to 58 m above surrounding natural ground level (108 mAOD), provides additional dispersion for the pollutants, reducing the ground level air quality impacts.

At an elevation of 108 mAOD, the proposed 23 m increase in stack height reduces the environmental impact of the IWMF's emissions on local air quality to a lower level than that originally reviewed and approved in the extant planning permission.

A detailed sensitivity analysis has been undertaken using more recent data from Stansted and Andrewsfield Meteorological Office weather stations. The sensitivity analysis demonstrates that the data and weather station location have a negligible change to the conclusions of the Dispersion Modelling Assessment. Fundamentally, the effect of increasing the stack height to 58m above surrounding ground level reduces the impact of emissions from the IWMF further.

The assessment demonstrated that the use of the Andrewsfield or Stansted weather data will not change the magnitude of change predicted as part of the Significance of Air Quality Effects report, or the conclusions of the Dispersion Modelling Assessment. The predicted distribution of emissions does not change significantly using the updated Andrewsfield and Stansted data, nor does the impact of the IWMF's emissions at sensitive receptors. The conclusions of the air quality assessment remain unchanged, namely:

At an elevation of 108 mAOD, the proposed 23 m increase in stack height reduces the environmental impact of the IWMF's emissions on local air quality to a lower level than that originally reviewed and approved for the extant implemented planning permission.

8.1 IMPACT ON BEES

On the 25 January 2018, Essex County Council requested clarification if the assessment(s) had considered the impact of emissions on bees, and the following was noted:

Information is contained within the Rivenhall - Dispersion Modelling Assessment, Human Health Risk Assessment, Habitat Management Plan and further consideration is also made within the Nuisance and Pest Management Plans:

Within the Dispersion Modelling Assessment the following should be noted:

Identification of Sensitive Receptors

When assessing the impact of the development, the assessment considers the point of maximum impact as a worst-case. In addition, the impact has been assessed at a number of identified sensitive receptors including the closest houses and footpaths, all European statutory designated ecological sites within 10km, and all UK statutory and locally designated ecological sites within 2km of the Facility.

Approach and Assessment of Impact on Air Quality – Protection of Ecosystems

The impact of air quality on ecosystems has been assessed using a standard approach.

- a) The Environment Agency has stated that, if the contribution within an entire protected site is less than 1% of the long-term and less than 10% of the short term benchmark, the emissions are not significant and it can be concluded no likely significant effect either alone and in-combination with other sources of pollutants, irrespective of background levels.
- b) If the process contribution at European and UK designated sites is greater than 1% of the relevant long-term, or 10% of the short term benchmark, but the total predicted concentration including background levels is less than 70% of the relevant benchmark, the Environment Agency has stated that the emissions are not likely to have a significant effect.
- c) If the process contribution at locally designated sites is less than the relevant benchmark, the Environment Agency has stated that the emissions are not likely to have a significant effect.

The impact of the deposition of nitrogen and acid gases on sensitive habitats has been assessed using a standard approach.

- a) It has been assumed that all items of plant operate at the emission limits for the entire year whereas actual operational emission concentrations will be lower and the plant will be offline for maintenance purposes.
- b) It has been assumed that all habitats are present at the point of greatest impact.
- c) impact has been calculated based on the maximum predicted concentration over a 5-year period at each ecological site and applying conservative deposition assumptions from the Environment Agency.
- d) The results have been compared to habitat specific Critical Loads.

No European or UK designated site have been identified as requiring consideration within this air quality assessment.

A number of non-statutory designated sites have been identified within 2km of the IWMF. An assessment, based on broad habitat types, has concluded that the impact of emissions on these sites is not significant. This conclusion has been drawn because the Process Contribution is less than 100% of the Critical Level or Load.

The Human Health Risk Assessment notes: The Facility will be designed to meet the emission limits outlined in the IED (2010/75/EU). Limits have been set for pollutants known to be produced during the combustion of waste which have the potential to impact upon the local environment either on human health or ecological receptors.

In addition to the above, further information is presented within the approved IWMF Habitat Management Plan:

3.2.2.7 Invertebrates

A habitat assessment revealed that habitats at the Site were generally of low value for invertebrates, with an area of semi-improved neutral grassland south of the former aircraft hangar and the woodland blocks being valued at a slightly higher, local level of ecological importance. Field survey recorded 86 species of invertebrate, 52 of which were beetles. The majority of invertebrate species recorded at the Site are found throughout the UK or widely in southern England and none are of known conservation concern. Accordingly it was concluded that overall the Site was of low entomological interest.

Notwithstanding the above, the HMP targets the creation and sustainable management of invertebrate habitats within and around the site:

5.2.1 Management Vision

The IWMF and Woodhouse Farm are surrounded by structurally diverse broad-leaved woodland, which is dominated by mature Pedunculate Oak, Ash, Hornbeam, and other native species with a well-developed shrub layer and ground flora. Woodland provides suitable hibernating and foraging habitats for the neighbouring population of Great Crested Newt, nesting habitat for a range of bird species of conservation concern (including Dunnock, Song Thrush and Bullfinch), and foraging and commuting habitat for bats and Barn Owl which roost in the refurbished Woodhouse Farm. Deadwood harbours invertebrates which in turn provide a source of food for amphibians and birds. Species-rich native hedgerows link this woodland to Maxey's Spring woodland and Storey's Wood LoWS and as such provide a valuable migrating corridor for the diverse faunal assemblages.

In addition to the above it was noted that the local landscape is predominantly arable and subject to intensive farming operations, which includes spraying pesticides and herbicides.

Emissions from the IWMF will not impact on ecologically sensitive receptors, and the overall habitat management proposals across the site targets the creation, improvement and connectivity of invertebrate habitats.

The success and long-term management of the above will be subject to routine monitoring to prevent potential issues associated with nuisance:

The Ecological Clerk of Works and the Pest Controller will also consider if the wider establishment of Priority Habitats around the site (and the development of biodiverse environments likely to attract and support insects) could be the source of pest nuisance, rather than those directly associated with the IWMF operations.

8.2 NATURAL ENGLAND

Within Essex County Council's Development and Regulation Committee Report DR/05/16 the ecological and biodiversity impacts of the IWMF were fully considered when planning permission was granted, and it was noted that:

Natural England has raised no objection to the amendments to the proposals or the discharge of the conditions. The County's ecologist is satisfied with submitted details with respect to the condition 53 (ecological survey update) and condition 54 Habitat Management Plan) and these conditions can be discharged. No adverse comments have been received with respect to the traffic calming measures for the haul road required under condition 62 to protect otters and voles.

... the amended development details do not give rise to any additional adverse impacts not addressed through the original mitigation and the proposals are considered to be in accordance with WLP policy W10E and do not conflict with BDLPR policies, 80, 81 & 84.

Through consultation into the application(s) to increase the height of the IWMF's stack Natural England has confirmed:

Natural England currently has no comment to make on the variation of conditions 2, 14 and 17

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, the emissions from the proposed 23m increase in the 7m diameter stack will not impact on ecologically sensitive receptors or habitats.

9 IMPACT ON GROUND AND SURFACE WATERS

The PAIN report states that:

The River Blackwater is a protected river and is classified as over-abstracted. The applicant has indicated that a year-round abstraction licence is required to operate the facility. This would have a negative environmental impact on the river and contravene condition 19 of the current planning permission.

Abstraction and discharge licences are issued and regulated by the Environment Agency. Gent Fairhead & Co Limited holds an existing licence from the Environment Agency (Serial No. AN/037/0031/001/R01) to abstract 250,000 m³ of water per year from the River Blackwater during the months November to March inclusive. The licence was originally issued in 2009 and renewed in 2016; it states the following conditions:

- “water abstraction at NGR TL 8343 2223 from a pumping sump with two pumps with a combined capacity of not more than 100l/sec (NOTE: this point is on the River Blackwater where the old access road to the former Blackwater Aggregates Coggeshall Pit quarry crosses the River Blackwater ie in GFC’s land ownership/control);
- for the purpose of filling reservoirs for the subsequent purpose of process water for waste treatment, processing and recycling;
- the maximum quantity of water to be abstracted is not to exceed:
 - 360 m³/hr;
 - 8,640 m³/day; and
 - 250,000 m³/yr.
- no abstraction is permitted when the flow in the River Blackwater (as gauged by the Agency) at Appleford Bridge gauging station (NGR TL 845 158) is equal or less than 1,309l/sec (1.309 m³s⁻¹); and
- no abstraction shall take place until the Licence holder has provided a storage facility, capable of storing at least 250,000 m³ of water which is constructed or lined so that it remains impermeable.”

In line with the IWMF’s existing and implemented planning permission, the facility will operate under a Zero Liquid Discharge (or Closed Loop) system, whereby:

- Water for use within the IWMF will be pumped from Upper Lagoon via New Field Lagoon and fed into the Pulp Plant at a rate of 507.5 m³ per day to support and supplement the IWMF’s Zero Liquid Discharge (or Closed Loop) waste water treatment system;
- The Pulp Plant requires a maximum of 1,750 m³ of water per day to produce 85,500 tonnes of high grade recycled pulp per year;
- Water from the Pulp Plant will be cleaned and treated to an exceptionally high standard through the WWTP. Allowing for water losses associated with the various IWMF recovery, recycling and treatment processes, the maximum waste water flow into the WWTP will be 1,506 m³ per day;
- Allowing for water losses through the WWTP reverse osmosis and evaporation processes 1,496 m³ of cleaned and treated water will be recirculated and reused within the Pulp Plant or the nearby lagoon network to provide a Zero Liquid Discharge (or Closed Loop) waste water treatment system.

On the 23 December 2016, Gent Fairhead & Co Limited received planning permission ESS/44/16/BTE for the Installation of an abstraction point, pumping equipment and water main from the River Blackwater to the IWMF site (ESS/34/15/BTE) using its existing abstraction licence (Environment Agency ref AN/037/0031/001/R01) at land between River Blackwater and IWMF site.

It is important to note that the implemented IWMF scheme can operate under a closed loop water management system, using the existing abstraction only arrangement approved under planning permission ESS/44/16/BTE.

Whilst the option to apply for an alternative abstraction and discharge arrangement always exists, any application (if made) would be subject to Environment Agency approval. However, in line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, there is no change to the IWMF's Zero Liquid Discharge (or Closed Loop) operating system:

The current application remains on the basis of utilising surface water collected on site and from the surrounding agricultural land and utilising the existing abstraction licence from the River Blackwater, the "closed loop system".

The EA has not raised objection to the proposed arrangement of utilising the existing abstraction from the Blackwater River, with storage of water in Upper Lagoon and New Field Lagoon.

Details have been submitted with respect to foul water management (Condition 22), surface and groundwater management (condition 23) and groundwater monitoring (condition 24) and the EA have no objection to discharge of these conditions.

In issuing the IWMF's Environmental Permit EPR/FPP3335YU/A001 the Environment Agency presented its decision summary relating to the IWMF's water management proposals, which states:

A 'closed loop' water management system has been proposed by the company meaning there will be no discharge of any process effluents or other liquid discharges to the River Blackwater. The issued permit therefore prohibits point source emissions to any surface waters.

Planning Condition 19 states:

No works to install process equipment or plant within the IWMF shall commence until details of the IWMF process layout and configuration have been submitted to and approved in writing by the Waste Planning Authority. The development shall be implemented in accordance with the approved details.

Considering the above, and the commitment to: start the IWMF's main civil engineering construction works; commence the installation of the IWMF's mechanical and electrical process plant and equipment; carry out the IWMF's commissioning and quality assurance trials; and, commence the IWMF's waste recovery, recycling and treatment operations at the site, the details that will be submitted to Essex County Council will comply with the Zero Liquid Discharge (or Closed Loop) operating system.

10 LOSS OF AGRICULTURAL LAND

The PAIN report states that:

Agricultural land and the human food chain will be negatively impacted by the build-up of particulate deposits on the land.

The modelling presented by PAIN within their report, and their conclusions relating to the potential air quality and human health impacts of emissions from the IWMF onto agricultural land is flawed, inaccurate and misleading. Their data used within their model is selective using the highest peak loads and applies them without setting up or modelling the effects caused by changes in wind direction, wind speeds and atmospheric dispersion. The models would fail to meet any technical due diligence or quality assurance that would normally be expected for such analysis.

Scientists at the Environment Agency's Air Quality Modelling & Assessment Unit (AQMAU) have reviewed all air quality and human health impact assessments submitted in support of the proposed IWMF application(s) and concluded that the facility does not pose a risk to the local environment or the health and wellbeing of nearby and distant residents.

Section 7 of the Human Health Impact Assessment identifies that the point of maximum impact for an "Agricultural" receptor is located on an open field (within the adjacent quarry) to the north of the IWMF.

The assessment submitted in support of the application(s) confirms that the emissions from the facility at the point of maximum impact will not result in appreciable health risks resulting from its operation; and this, applies to both the assessment completed for the 35m stack (existing planning permission ESS/34/15/BTE) and the proposed 23m increase in stack height to 58m above surrounding ground level.

In issuing the IWMF's Environmental Permit the Environment Agency presented its decision summary relating to the potential impacts of the IWMF on human health and local air quality, which states:

As part of our decision making process, we have thoroughly checked the air quality and human health impact modelling assessments provided within the company's permit application. We have also undertaken a rigorous sensitivity analysis of these assessments including the effect of local topography and the proximity of buildings on the dispersion of pollutants (i.e. using a range of different input parameters within the modelling). Our conclusion is that we consider the proposed facility is unlikely to contribute to any breach of the relevant air quality standards for human health and the environment.

It is important to note that we reached the same conclusion as this for the company's first permit application which we refused on the basis of a stack height of 35 meters (above surrounding ground level). This means that even with a stack height of 35 meters we were satisfied that no air quality or human health thresholds would have been exceeded for the proposed incinerator. However, in addition to meeting all the required air quality and human health standards, permit applicants must also demonstrate to us how they intend to minimise the impact of their emissions on the environment by applying BAT. We believe that the design of the proposed incinerator is now such that pollutant emissions to air will be minimised.

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, there will be no change to the impacts the IWMF will have on agricultural land.

11 THE IMPACT ON HIGHWAYS

The PAIN report states that:

As a direct impact of the facility, it is estimated that over 17 million additional truck miles will be necessary, using 8.6 million litres of diesel, generating in excess of 31,000 TPA of CO₂. The energy expended in transporting materials to and from the site will exceed that generated.

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE, there will be no change in the number of HGV movements (404 daily movements 202 in 202 out) Monday to Friday and (202 daily movements 101 in 101 out) Saturdays, associated with the proposed 23m increase in the height of the IWMF's stack.

Within Essex County Council's Development and Regulation Committee Report DR/05/16 in granting planning permission for the existing implemented IWMF, the following is noted:

As HGV movements have been demonstrated to be within existing limits there are no additional impacts, and no additional mitigation is necessary over and above that provided by the existing conditions and legal obligations.

And,

No objection was raised by the Highway Agency to the original application or by Highways England with respect to the current application. In addition the Highways Authority has raised no objection to the use of the crossings with Ash Lane and Church Road subject of the imposition of similar conditions and obligations with respect to traffic movements and highway works as existing.

And,

Rivenhall is identified within the emerging Pre-Submission draft RWLP (unpublished) as a site that would be suitable for "Other Waste Management" which could include CHP/Energy from Waste. It should also be noted that one of the key underlying principles in the NPPW is for communities and businesses to engage with and take more responsibility for the waste they generate, not to send it elsewhere;

Traffic impacts associated with the movement of HGVs to/from the IWMF during construction and operation were assessed in the original planning application.

A WRATE assessment was completed for the original IWMF planning application which considered the holistic impact of the facility which included direct and indirect emissions (construction, transport, disposal of residues, etc.). This reported annual savings of greater than 120,000 tonnes of carbon dioxide emissions compared to existing waste management arrangements.

The information presented by PAIN is made without basis or foundation relating to the potential operation of the IWMF, nor does their assessment make any account of existing waste transport arrangements that are operated within Essex or the carbon footprint relating to the overseas export of RDF materials travelling through Essex to the east coast ports and its transport across Europe for disposal. This particularly relates to the residues from Essex County Council's Tovi Eco Park (i.e. approximately 50% of Essex's LACW or black bag municipal waste), which is currently collected and transported by HGV and container ships for treatment through Energy from Waste facilities in the Netherlands.

It is not realistic for PAIN to claim that the IWMF generates "new traffic" on Essex's road network. These wastes are already on the road(s) and are being transported to a variety of locations at present. Arguably, as the report on "Need" by SLR Consulting Limited has demonstrated, the presence of the IWMF could lead to Essex becoming "Self-Sufficient" in waste disposal thereby preventing the collection, transportation and overseas export of waste from Essex, and in turn reducing "waste miles" overall.

12 THE 25 YEAR PLAN

The PAIN report refers to the UK Government's A Green Future: Our 25 Year Plan to Improve the Environment.

However, PAIN fail to highlight that a fundamental strategy that is both supportive and aligned to the delivery of the IWMF is:

iv. Improving management of residual waste

Since 2000 we have diverted significant quantities of residual waste – i.e. waste that cannot be reused or recycled – from landfill through the development of energy from waste (EfW) facilities. These generally recover energy from the waste to produce electricity. In 2016/17, some 38% of waste collected by Local Authorities went to EfW compared with 16% that went to landfill. More can be done however. We want to make sure that materials ending up in the residual waste stream are managed so that their full value as a resource is maximised and the impact on the environment of treating them is minimised.

We will continue to encourage operators to maximise the amount of energy recovered from residual waste while minimising the environmental impact of managing it, for example by utilising the heat as well as electricity produced. The actions set out in this Plan will help us build on this to ensure that the value of residual waste as a resource is fully realised and that emissions of carbon dioxide during the energy recovery process are kept as low as possible. We must bear in mind that any infrastructure must be able to adapt to future changes in the volume and make-up of residual waste generated and developments in technology. That way, waste is not locked into residual waste treatment processes when it could be reused or recycled.

In line with Essex County Council's original decision of the 26 February 2015 to grant planning permission ESS/34/15/BTE the flexibility of the facility was fully considered when planning permission was granted because it delivered:

A plant which is capable of dealing with large quantities of MSW and/or C&I waste (and in this case is combined with a specialised waste paper facility), provides considerable flexibility in terms of the type of waste that could be treated and the customers that could be served. It seems to me that such flexibility helps to maximise the economic viability of the project.

Based on the maximum permitted waste throughput of 853,000 tpa, the IWMF would recover and recycle 378,775 tpa of materials equivalent to 45% of the total annual waste input.

In addition to the above, the Essex and Southend-on-Sea Waste Local Plan was adopted by Essex County Council on 11 July and Southend-on-Sea Borough Council on 19 October 2017.

This Plan sets out the Councils' strategy and policies for waste development until 2032. The Plan forms part of the Development Plan in Essex and now officially replaces the Waste Local Plan adopted in 2001.

The Plan is now part of the development plan in Essex and waste planning decisions must be taken in line with the Plan, subject to other material considerations. The IWMF is an allocated permanent strategic site within the Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination In Public) of the IWMF proposals, which are supportive of Essex's principle aim of "Net Self-Sufficiency".

This means having sufficient waste transfer, recycling, recovery, and disposal capacity within the Plan area to manage the amount of waste generated, with only limited cross border movements with other authorities. Such an approach recognises that waste travels across administrative boundaries, with the distance travelled being, at least in part, related to the volume of waste required to make a facility economically viable set against the amount of waste expected to arise in a given area.

The IWMF is allocated within the Plan for Biological and Residual Non-Hazardous Waste Management Capacity, comprising 30,000 tpa through Anaerobic Digestion and 595,000 tpa through Combined Heat and Power (via its Energy from Waste facility).

13 THE EA PERMIT

The PAIN report states:

The EA permit has been granted but not for the facility as permitted in 2010. The 2010 design was refused a permit. In addition, the EA states that a recommended stack height does not assume planning should or would be granted. Consequently, no weight should be attributed to the granting of the EA permit.

In order to operate, the Rivenhall IWMF needs both planning permission from Essex County Council and an environmental permit from the Environment Agency. These are separate and distinct processes and planning permission can be granted without the environmental permit and vice versa.

In issuing the IWMF's Environmental Permit EPR/FPP3335YU/A001 the Environment Agency presented its decision summary relating to the potential impacts of the IWMF on human health and local air quality, which states:

As part of our decision making process, we have thoroughly checked the air quality and human health impact modelling assessments provided within the company's permit application. We have also undertaken a rigorous sensitivity analysis of these assessments including the effect of local topography and the proximity of buildings on the dispersion of pollutants (i.e. using a range of different input parameters within the modelling). Our conclusion is that we consider the proposed facility is unlikely to contribute to any breach of the relevant air quality standards for human health and the environment.

It is important to note that we reached the same conclusion as this for the company's first permit application which we refused on the basis of a stack height of 35 meters (above surrounding ground level). This means that even with a stack height of 35 meters we were satisfied that no air quality or human health thresholds would have been exceeded for the proposed incinerator. However, in addition to meeting all the required air quality and human health standards, permit applicants must also demonstrate to us how they intend to minimise the impact of their emissions on the environment by applying BAT. We believe that the design of the proposed incinerator is now such that pollutant emissions to air will be minimised.

In its assessment of GFC's first Environmental Permit Application (duly made 15 November 2015 and refused 20 December 2016), the Environment Agency's Air Quality Modelling & Assessment Unit (AQMAU) considered the impacts associated with emissions from the IWMF stack at a height of 35 m above surrounding ground level (85 mAOD) on air quality, habitats and human health and concluded:

- *We [AQMAU] agree that the facility [IWMF] is unlikely to contribute to exceedances of air quality Environmental Quality standard (EQS) for human health*
- *We [AQMAU] agree with Fichtner's [GFC's] conclusions on ecological impacts*
- *With respect to their HHRA, we agree with Fichtner's [GFC's] conclusion that the facility would not result in any exceedance of the COT-TDI (Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment – Tolerable Daily Intake).*

In providing its reasons for refusal the Environment Agency's highlighted that the IWMF would meet recommended standards, but the Agency believed that if the stack was increased in height it would reduce the emissions impacts even further.

Within the Environment Agency's decision report, it is noted that on the 21 September 2016 the Agency consulted with Essex County Council to seek their views on the status of the implemented planning permission ESS/34/15/BTE and views on any proposed changes to the extant permission. Through consultation Essex County Council confirmed: "any changes to the proposal would trigger a requirement for a variation application to the current planning consent"

The IWMF is allocated as a permanent strategic site within the Waste Local Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination in Public) of the IWMF proposals, which are supportive of Essex's principle aim of "Net Self-Sufficiency".

The Examination In Public of the Waste Local Plan was held between the 27 September 2016 and 7 October 2016, and the Inspector was made aware of representations submitted by members of PAIN to the Environment Agency (when considering the first Environmental Permit application for a stack of 35 m above surrounding ground level) requesting that the IWMF stack should be increased in height. In addition, the Examination in Public took place following Essex County Council's comments to the Environment Agency in consultation to the first Environmental Permit application.

Within her report on the examination into the Replacement Waste Local Plan, the Inspector concluded in paragraph 54:

Although there was strong opposition to this allocation, the grant of planning permission has established the principle of this form of development on this site. It is also a firm indication that the waste management capacity is likely to be delivered during the lifetime of the RWLP. I understand that further work will be required as a result of the Environmental Permitting process, including a revision to the design in relation to the height of the stack. The fact that an Environmental Permit is being pursued supports the case that the facility should be regarded as deliverable. Although other concerns were raised, including the detailed arrangements between this facility and the Tovi Eco Park or the extent to which it might actually function as a combined heat and power facility, these do not alter the appropriateness of the site for the allocated waste management uses.

In summary, weight can be given to the Environmental Permit process(es), the existing and implemented Planning permission ESS/34/15/BTE and the Inspector's comments relating to the: "appropriateness of the site for the allocated waste management uses" including "revision to the design in relation to the height of the stack".

14 NATIONAL PLANNING POLICY FRAMEWORK

Planning permission for the existing and implemented IWMF was granted on the 26 February 2016. Within Essex County Council's Development and Regulation Committee Report DR/05/16 full consideration was given to the National Planning Policy Framework which highlighted and concluded:

The proposals are therefore considered to be in accordance with the NPPF, NPPW and national energy policy.

And,

In accordance with the National Planning Policy on Waste 2014 the planning authority has sought appropriate technical advice to satisfy itself that the operation would not result in any significant air quality, pollution or health impacts and there is no reliable evidence to suggest that perceptions of risk are objectively justified, i.e. that the operation of the IWMF actually would pose an actual health risk; none of the consultees conclude that this would be the case. The concerns raised by residents regarding risk to human health are noted, but it is not considered that as part of the planning process (in accordance with previous case law and guidance) that substantial weight can be attached to these concerns in the determination of this planning application.

And,

The number of HGV movements is not proposed to be changed and are limited by condition to 404 movements (202 in 202 out) Monday to Friday and 202 movements (101 in 101 out on Saturdays).

In addition to the above, Paragraph 154 of the Revised National Planning Policy Framework states that:

"When determining planning applications for renewable and low carbon development, local planning authorities should:

- a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and*
- b) approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas."*

The IWMF is allocated as a permanent strategic site within the Waste Local Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination in Public) of the IWMF proposals, which are supportive of Essex's principle aim of "Net Self-Sufficiency".

The National Planning Policy for Waste (NPPW) states that when determining waste planning applications, waste planning authorities should:

- only expect applicants to demonstrate the quantitative or market need for new or enhanced waste management facilities where proposals are not consistent with an up-to-date Local Plan. In such cases, waste planning authorities should consider the extent to which the capacity of existing operational facilities would satisfy any identified need;*
- concern themselves with implementing the planning strategy in the Local Plan and not with the control of processes which are a matter for the pollution control authorities. Waste planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced;*

The NPPW forms part of the Revised National Planning Policy Framework (RNPPF) which maintains the planning principles of the NPPF in that the planning system should contribute to the achievement of sustainable development and that there is a presumption in favour of sustainable development. Section 11(c), page 6, states that *“For decision-taking this means approving development proposals that accord with an up-to-date development plan without delay”*

Full consideration was given to the National Planning Policy Framework, National Planning Policy for Waste and National Policy Statement for Renewable Energy Infrastructure in granting the IWMF planning permission ESS/34/15/BTE by Essex County Council.

The application(s) to change the height of the stack are in accordance with the National Planning Policy Framework.

15 PLANNING INTEGRITY

Gent Fairhead & Co Limited originally received planning permission (ESS/37/08/BTE) for the development of the IWMF at Rivenhall Airfield on 2 March 2010 from the Secretary of State following a Public Inquiry (APP/Z1585/V/2104804).

Subsequent amendments have been approved by Essex County Council which relate to:

- i. Additional wording to Condition 2 as permitted by ESS/37/08/BTE/NMA dated 25 October 2012;
- ii. An extension of time of one year to the commencement of development under Condition 1 (ESS/41/14/BTE);
- iii. The removal of Conditions 28 and 30 that restricted the sourcing of the IWMF's solid recovered fuel and waste paper (ESS/55/14/BTE) which was made because of changes in planning law and national guidance; and
- iv. A variation to the layout of the IWMF which was not substantially different to that previously approved, with no changes to the types of waste to be handled at the IWMF or maximum vehicle numbers, but with a change to the integrated internal recovery, recycling and treatment capacities (ESS/34/15/BTE).

In parallel with ESS/34/15/BTE, Gent Fairhead & Co Limited submitted all necessary pre-development details required under conditions. Planning permission ESS/34/15/BTE was granted on the 26 February 2016 and the development has been implemented.

The application(s) to change the height of the IWMF stack are required to align its planning permission to the Environmental Permit EPR/FPP3335YU/A001.

Through its determination of the Environmental Permit applications the Environment Agency has confirmed that:

As part of our decision making process, we have thoroughly checked the air quality and human health impact modelling assessments provided within the company's permit application. We have also undertaken a rigorous sensitivity analysis of these assessments including the effect of local topography and the proximity of buildings on the dispersion of pollutants (i.e. using a range of different input parameters within the modelling). Our conclusion is that we consider the proposed facility is unlikely to contribute to any breach of the relevant air quality standards for human health and the environment.

It is important to note that we reached the same conclusion as this for the company's first permit application which we refused on the basis of a stack height of 35 meters (above surrounding ground level). This means that even with a stack height of 35 meters we were satisfied that no air quality or human health thresholds would have been exceeded for the proposed incinerator.

The IWMF is allocated as a permanent strategic site within the Waste Local Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination in Public) of the IWMF proposals, which are supportive of Essex's principle aim of "Net Self-Sufficiency".

The IWMF is an integral part of the Waste Local Plan. Its design is flexible to meet the existing and future needs of waste recovery, recycling and treatment.

16 CONFLICT

The PAIN report states:

The committee needs to be aware of a serious conflict of interest caused by the fact that ECC owns the waste from Basildon; it is targeted at the Rivenhall IWMF as stated in the RLWP and ECC has waste credits for it. As a result of this, the committee will be making a decision that has the potential for significant and direct financial gain, which compromises ECC's transparency rules and effectively makes it judge and jury in this decision-making process.

The Planning Application Supporting Statement explains that the treatment of residual waste through the MBT at Tovi Eco Park, assuming successful commissioning at maximum capacity, is expected eventually to produce approximately 200,000 tpa of RDF/SRF. At this stage there is no operational facility within Essex or Southend that could utilise this material for the production of power. Treated residual waste (RDF/SRF) produced by the MBT at Tovi Eco Park is currently being exported by Essex County Council (under contract) through Tilbury to energy recovery in plants elsewhere in Europe.

The IWMF, once constructed, could potentially receive and treat the residual waste from Tovi Eco Park, however, this would be subject to commercial contract negotiation(s) with Essex County Council.

The IWMF is being developed and delivered as a merchant commercial facility; therefore, waste supply and treatment contracts have been agreed with other parties. No allowance nor assumption has been made for the IWMF to treat the residual arisings from Tovi Eco Park due to differences and maturity of the commercial operations and contracts at both facilities.

No discussions nor commercial negotiations have been held relating to the receipt and treatment of the residual arisings from Tovi Eco Park at the IWMF.

National Planning Guidance sets out the principle of "self-sufficiency" in waste capacity. This was a material consideration in the development of the Waste Local Plan. This is the concept of providing enough waste capacity to handle the forecasted amount of waste arising in the Plan area. The Guidance indicates that waste planning authorities are not expected to deal solely with their own waste to meet the requirements of self-sufficiency.

The IWMF is allocated as a permanent strategic site within the Waste Local Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination in Public) of the IWMF proposals, which are supportive of Essex's principle aim of "Net Self-Sufficiency".

Within her report on the examination into the Replacement Waste Local Plan, the Inspector concluded in paragraph 54:

"... Although other concerns were raised, including the detailed arrangements between this facility and the Tovi Eco Park or the extent to which it might actually function as a combined heat and power facility, these do not alter the appropriateness of the site for the allocated waste management uses."

There is no conflict of interest between Essex County Council's operation of the Tovi Eco Park, or the proposed development and operation of Gent Fairhead & Co Limited's IWMF.

At an appropriate time in the future, once the IWMF has completed its commissioning and the facility becomes fully operational, it may be in a position to provide a proposal and gate price in response to other public and private waste management operators seeking to review its waste treatment and disposal operations. This may include Essex County Council, who would no doubt hold an open and transparent competitive tender to ensure that it gets the best results for its residents. Essex has held similar open tenders on many previous occasions and always ensures that it gains several proposals from reliable operators through a transparent process that obtains the best and most cost-effective solution to its waste disposal needs.

17 COMMUNITY ENGAGEMENT

The PAIN report states:

The NPPF calls for public and community engagement, which was echoed in the scoping opinion, but there has been no engagement with the public despite numerous requests for this to take place. The committee needs to know that the amount of unaggregated objections is almost 4,000, and there were several thousand objections to the EA permit, compared to just one or two supportive responses.

Gent Fairhead & Co Limited have been committed to building the IWMF for many years and have set up a Site Liaison Group. The Site Liaison Group was established in 2014 as a means of communication with the local public via representatives of each of the Parishes of Bradwell, Coggeshall, Feering, Kelvedon, Rivenhall and Silver End. In addition, representatives of the local Community Group, Braintree District Council, Essex County Council and the Environment Agency also sit on the Site Liaison Group.

Since its inception, the Site Liaison Group has met on four occasions and Gent Fairhead & Co Limited has kept the Group informed by issuing its members with updates and information when appropriate. In addition, a website was developed in 2014 (www.wrren.co.uk) and is openly available to members of the public or other interested parties to read and review the planning and environmental permitting information that relates to the IWMF. The information presented on the website has been prepared by respected environmental and scientific professionals.

Despite the claims made by PAIN it is important to note that through Cllr Robert Mitchell a meeting was arranged with Coggeshall Parish Council and representatives of Stisted, and Bradwell and Pattiswick Parish Councils for the 23 November 2017.

The purpose of the meeting was to focus on the details of the planning application(s) to increase the height of the IWMF stack; therefore, matters associated with Air Quality and Landscape and Visual Impacts were planned to be the main topics for discussion based on the following outline agenda:

- i. Welcome and Introductions;
- ii. Overview of the planning application(s) and Environmental Permit;
- iii. Discussions on Air Quality and Emissions: this will be aimed at presenting factual scientific data in an understandable manner and addressing any concerns associated with the IWMF emissions;
- iv. Discussions on Landscape and Visual Impact: this will be aimed at presenting an overview of why there is only one stack on the site, the history behind its reflective design, and the degree of change resulting from the increase in stack height;
- v. General questions and answers relating to the above, and the ongoing application(s).

However, at a meeting of Coggeshall Parish Council on the 13 November 2017 it was decided to decline the opportunity to meet and speak with the Directors of Gent Fairhead & Co Limited and their Landscape and Air Quality specialists.

Notwithstanding the above, through the extended determination of the application(s) to increase the height of the IWMF stack, there has been a high level of public awareness of the proposals through numerous local newspaper reports, press statements offered by representatives of PAIN and Gent Fairhead & Co Limited (when contacted to offer a reply) and local television news items on both the BBC and ITV.

18 CONCLUSIONS

PAIN is opposed to the development of the IWMF, its allocation within the Essex and Southend Waste Local Plan and the planning permission for the existing and implemented IWMF was granted on the 26 February 2016.

Through their consultation into the Environmental Permit application(s) they have made representations that the IWMF stack should be increased to elevations far greater than the application(s) to change the height of the 7m diameter stack by 23m on a facility with a permitted operational footprint of 5.64ha.

Their fundamental objection relates to the emissions from the facility and its impact on the local environment.

In issuing the IWMF's Environmental Permit the Environment Agency stated:

As part of our decision making process, we have thoroughly checked the air quality and human health impact modelling assessments provided within the company's permit application. We have also undertaken a rigorous sensitivity analysis of these assessments including the effect of local topography and the proximity of buildings on the dispersion of pollutants (i.e. using a range of different input parameters within the modelling). Our conclusion is that we consider the proposed facility is unlikely to contribute to any breach of the relevant air quality standards for human health and the environment.

It is important to note that we reached the same conclusion as this for the company's first permit application which we refused on the basis of a stack height of 35 meters (above surrounding ground level). This means that even with a stack height of 35 meters we were satisfied that no air quality or human health thresholds would have been exceeded for the proposed incinerator.

In 2009, in considering the landscape and visual impact of the proposals, the Inspector took into account a number of factors including the existing landscape character and the proximity of existing properties and PRoW. It was noted that there are only a few residential properties located in close proximity to the site. The Inspector considered the impact of the various elements of the proposal including the buildings and plant themselves, the chimney stack, the access road and the proposed lighting. The Inspector took account of the proposed mitigation, including the part sunken nature of the buildings and plant, the location of the extended access road within a cutting, the proposed green roof, proposed landscape planting, the reflective finish of the chimney and the measures proposed to minimise light pollution and said:

"In conclusion on the overall subject of the impact on the landscape, it is accepted that visual harm is inescapable in the context of the provision of a major waste management facility. However, the issue is one of degree. The degree of harm that would result in this instance is remarkably limited. The low levels of visual impact arising from such a large-scale proposal confirm that this site is ideally suited to the proposed use."

The IWMF is allocated as a permanent strategic site within the Waste Local Plan that was subject to detailed and bespoke site identification and assessment methodology by Essex County Council and the Inspector (through her Examination in Public) of the IWMF proposals, which are supportive of Essex's principle aim of "Net Self-Sufficiency".

The Examination In Public of the Waste Local Plan was held between the 27 September 2016 and 7 October 2016, and the Inspector was made aware of representations submitted by members of PAIN to the Environment Agency (when considering the first Environmental Permit application for a stack of 35 m above surrounding ground level) requesting that the IWMF stack should be increased in height. In addition, the Examination in Public took place following Essex County Council's comments to the Environment Agency in consultation to the first Environmental Permit application advising that: "any changes to the proposal would trigger a requirement for a variation application to the current planning consent"

Within her report on the examination into the Replacement Waste Local Plan, the Inspector concluded in paragraph 54:

Although there was strong opposition to this allocation, the grant of planning permission has established the principle of this form of development on this site. It is also a firm indication that the waste management capacity is likely to be delivered during the lifetime of the RWLP. I understand that further work will be required as a result of the Environmental Permitting process, including a revision to the design in relation to the height of the stack. The fact that an Environmental Permit is being pursued supports the case that the facility should be regarded as deliverable. Although other concerns were raised, including the detailed arrangements between this facility and the Tovi Eco Park or the extent to which it might actually function as a combined heat and power facility, these do not alter the appropriateness of the site for the allocated waste management uses.

The planning application(s) ESS/36/17/BTE and ESS/37/17/BTE made by Gent Fairhead & Co Limited (GFC) to Essex County Council (ECC) simply seek to increase the proposed height of the stack at the permitted IWMF on the former Rivenhall Airfield near Kelvedon in Essex. The environmental impacts associated with the proposed change in stack height have been fully assessed in terms of the air quality, human health, habitat, landscape and land use impacts associated with the proposed 23m increase in the IWMF's stack height, and these have demonstrated that impact(s) associated with the change from the existing baseline environment would be Low.