The recovery of energy from waste is perfectly sensible provided it can be done safely with minimal emissions. However, sadly this is not currently the case.

Waste incinerators generate at least twice as much CO^2 per Unit of energy generated than the current grid average with additional NOx and harmful particulates. They are most certainly NOT a green development. The public and media are being deliberately misled on this aspect of the development. Coal fired power stations are being forced to close for environmental purposes, this proposal is not in the spirit of that progress and contradicts the 2015 Paris climate change agreement.

https://zerowasteeurope.eu/2020/03/understanding-the-carbon-impacts-of-waste-to-energy/

Waste incinerators currently appear cost effective due to a legal loophole which is due to be challenged in court and will most likely be closed by the EU or UK courts soon.

https://www.theguardian.com/environment/2020/aug/25/legal-challenge-uk-exclusion-waste-incinerators-emissions-trading-scheme

This new development will also most likely be severely restricted by law or become economically unviable within the near future as climate change restrictions are increasingly tightened.

There are also many health risks associated with the emissions. There is nothing to reassure against a drop in air quality for surrounding residents or details of any emissions monitoring that will be carried out to protect residents in the surrounding areas. Studies have shown that a wide area can be affected, and that accurate dispersion modelling is required. There is no dispersion modelling included with the application.

https://www.hindawi.com/journals/jeph/2013/560342/

It is noted that the Nottinghamshire wildlife trust response is not included in the proposal documentation, yet they are noted as having supplied a response. This will have an adverse effect on the Attenborough wildlife reserve situated across the River.

Please see the following website for the harmful effects of incineration:

https://ukwin.org.uk/oppose-incineration/

Additionally, the site could be used for renewable energy providers generating an equivalent amount of power without any risks to surrounding area at a lower cost of energy supply. This could be integrated with eco houses, parks and wetlands building on the success of the Attenborough nature reserve which is one of the most visited parks in the country. This would generate a much healthier supply of jobs, tourism income and housing to the region. A waste incinerator of this size is likely to damage tourism and only strengthens the image of the midlands as a region of factories and planning blight. This development would be squandering the chance to greet visitors to Nottingham with something more pleasant than a stack of chimneys.

Please reject this development and hold out for a more environmentally friendly and visually appealing proposal.

3rd party data

Sent: 07 September 2020 20:01
To: development management
Subject: Re planning application ES/4154

3rd party data

Dear Sir/ Madam

Re planning application ES/4154

I write in support of the application by Uniper to build an energy from waste plant on the current Ratcliffe on Soar site, when the existing power station closes.

As a result of government legislation on coal closures, many jobs will be lost to the area when this happens.

I believe that the proposed development is important to the economy of the local area for many reasons:

The plant will play an important part in the country's journey to achievIng net zero for Carbon emissions by 2050

The new plant will be considerably cleaner than the current coal station and is classed as renewable generation.

It will provide local, high value technical jobs for local residents when the existing power station closes

Building the EMERGE centre will support the site's future redevelopment based around sustainable energy. This in turn would provide a large number of highly paid skilled jobs.

The proposed development, with specified measures in place, would have a minimal impact on the local environment and would be significantly better for the environment than allowing the proposed waste that would be used to fuel the centre to be put into landfill.

As a Rushcliffe resident I think it is important that the area continues to provide high value jobs and plays an important part in the wider local economy.

The development of the EMERGE centre will be very important in ensuring that the Ratcliffe Power Station site continues to be an important part of energy production into the future.

3rd party data

3rd party data [redacted]

Sent: 10 September 2020 19:42
To: development management
Subject: Ratcliffe Incinerator ES/4154
Attachments: V1 Incinerator letter to councillors.docx

3rd party data [redacted]

3rd party data [redacted]

I am writing to you, as my attempt to object to the proposed incinerator online was thwarted by the failure of the NCC server today. I wish to register my objection to the incinerator on the grounds that:

Rubbish will be brought in from a wide are beyond Rushcliffe, adding to the already high carbon cost of this scheme. Outdated technology that will be a white elephant within its life. It will commit councils to incineration when other less carbon-emitting and more energy-neutral technologies would have been preferable. For councils it will be a an economic disincentive to recycling. It will destroy material that might one day be re-usable. Pollution is an obvious factor - there is no safe level for some contaminants. There is not a lack of landfill resource, as has been claimed.

I attached a document to my online objection, which was a letter written by # 3rd party data [redacted], giving more detail on the arguments against this proposal.

3rd party data [redacted]

Dear # 3rd party data

East Midlands Energy Re-Generation (EMERGE) Centre (Uniper Ltd), County Council Planning Reference: ES/4154

Reputational Damage for East Midlands Development

The proposed East Midlands regional hub seeks to deliver a national focal point for low and zero carbon technology. With an incinerator, the people of the East Midlands are being offered a **high carbon** source of energy with vague suggestions of less carbon intensive future adaptations (details and references below). Inward investment can and should be created without an incinerator, which will serve as an embarrassment to any prospects of building a reputation as a green tech park. Anaerobic digestion, hydrogen fuel, battery storage and other truly ambitious technologies already in use and in development in our region could and should be encouraged as alternative energy supplies. This is all the more galling because, in continental Europe, Uniper is a practitioner of some of these innovative and low carbon technologies. Nottinghamshire and the East Midlands are being treated as unworthy of Uniper's best technology. Will you let them do this to us?

Understanding future waste demand

We all know that waste has got to go somewhere and that we cannot wish it away, but please be assured that there are sensible alternatives to incineration. Uniper seek to persuade you that increased incineration is a reasonable choice for our county and region. Here is why they are wrong:

The Government is planning a more circular economy

The Government's waste strategy (ref 1), with its emphasis on a more circular economy, is dismissed in Uniper's planning application (Section 3.3.33) as being overambitious. Detail is lacking in the Strategy, and Uniper exploit this, failing to mention that the Environment Bill currently passing through parliament contains details of how the strategy will be implemented (ref 2). Uniper, along with the County's current energy policy, refer to many documents that were published before the Climate Change Act was amended in 2019 and therefore lack sufficient ambition. Moreover, the Government's Waste Strategy suggests a **tax on incineration if its waste ambition is not delivered** (p79). The secretary of state

echoed this sanction in a Westminster debate in February of this year (ref 3). This shows that the government intends to put pressure on local authorities such as yourselves to ensure that increases in recycling and other waste reduction measures are implemented.

From the above, it is reasonably safe to assume that government policies will lead to a rapid decrease in waste over the next couple of decades. But, if you believe that a backup plan is needed, the overcapacity of current and planned incinerators elsewhere provide that backup. For details of the overcapacity please see the objection that UKWIN have submitted to the Planning Department. UKWIN give details of the existing and emerging incineration capacity to treat approximately 2.67 million tonnes of waste within the Uniper's 2-hour isochrone to the planning application. A report on incineration capacity nationally was produced by Eunomia in 2017 (ref 4).

Anaerobic digestion

Treatment of biodegradable waste (and a proportion of mixed waste) by anaerobic digestion, possibly linked to heat generation is becoming the method of choice for this waste stream. The Environment Bill on its way through Parliament will introduce compulsory separate food waste collection. Food waste should therefore not be considered as an available resource for incineration.

Anaerobic digesion of biogenic and mixed residual waste with temporary landfill of unrecyclable plastics should be the method of choice for residual waste management. In the words of Sir Ian Boyd. Chief Scientific Advisor at Defra stated to the Commons Select Committee in 2018,

"Quite rightly, we have had a policy of trying to eliminate landfill in this country, because it has been seen as a major source of greenhouse gas pollution and, t o some extent, groundwater pollution. That is because we put biodegradable organics in—food waste, garden waste and things like that. Landfill is a very low-marginal-cost method for storing highly resistant materials like plastics and metals for long periods of time, if we cannot extract the value from them now. …. We should not lose sight of the fact that, in a few decades' time, or maybe a bit longer, we might be mining our landfill sites for the resources they contain. Rather than putting some of those resources into incinerators and losing them for ever, we might want to think differently about the landfill sites."

Air Quality

Air quality is of great concern to us all. Incineration allows particulate matter to be released into the environment, which is very troubling for downwind residents. The local government guide on air quality states: *"There is no safe level for particulate matter (PM10 and PM2.5), while NO2 is associated with adverse health effects at concentrations at and below the legal limits."* (ref 5) There is also the question of how breaches of regulations are dealt with. The quote below from Darren Jones MP at this year's Westminster Hall debate:

"Last year, I drew attention to a series of breaches by a company operating locally that had violated its permit more than a dozen times in the space of a year. It was eventually singled out by the Environment Agency, but a very high frequency of breaches had to occur before action could be taken. It should not take bad behaviour on that level to warrant enforcement action. Even when permits are revoked, the resulting appeals process is long, complicated and costly, imposing an obvious disincentive for the Environment Agency to deal with the individual breaches that collectively create such ***massive problems for local residents****. (ref 6)*

Do you consider it to be your duty as a councillor to look at both the letter of the regulations and the procedures available if those procedures are breached? Do you know what breaches of pollution levels there have been in the past few years in Notts? Are you confident that the responses have been swift and appropriate, and will continue to be swift and appropriate, given constraints on the budget? Please ask yourself how you, as a councillor, can guarantee air quality in the County?

Energy from Waste is a high carbon option

Sorry, this next part is a bit technical, but it's also, to my mind, the most important issue. So thank you for reading this far. The scoping letter sent by Nottingham County Council's planning officer # 3rd party data to Uniper on 6th April this year included a section on Climate Change Energy Efficiency and Sustainability, in which # 3rd party data made the point that the proposed development is a high carbon proposal. Ignoring this, Uniper's Centre Planning statement continues to peddle the myth that the proposed development has the "virtue of generating low-carbon energy" (Section 1.3.2, and throughout). Carbon emissions from incinerators are generally twice as high as their most common alternative, natural gas, and at least ten times as high as emissions from wind and solar installations (ref 7). It is incompatible with the Climate Change Act 2008 (2050 Target Amendment) Order 2019, which aims to reach net zero carbon emissions by 2050. People tend to forget that reaching

net zero doesn't just mean emission reductions: it means **zero** net carbon emissions, such as is only achievable with truly progressive technologies. Uniper is working with these technologies elsewhere, and could do so in Nottinghamshire. Using wind to create green hydrogen is an example of Uniper's better practice elsewhere (ref 8).

Comparisons between energy from waste and landfill/fossil fuel emissions are based on a logical fallacy

Section 3.6.6 of the application states that "the Proposed Development forms an important role in helping to achieve the required emission reductions by reducing greenhouse gas emissions from landfill and also from the generation of low carbon energy". In ES Appendix 8-4 of the planning application, Uniper set out analysis showing how the proposed development would deliver a carbon benefit over landfill estimated at **106,000** tonnes of CO2e per year (also p98 of Planning statement). Their analysis implies that the only choice available to society is that between energy from waste and landfill. This is simply a logical fallacy (a false dichotomy). This type of comparison goes back to the EU's Waste Framework Directive, i.e. this simplistic model was set up in an era where net zero carbon by 2050 was not a legally enforceable target and burning waste seemed like a good idea (ref 9). The dichotomy is inappropriate because there are other sources of electricity, other waste treatments (especially those dealing with methane emissions) and other ways of valuing short cycle carbon, detailed below.

Other sources of electricity.

The comparison of proposed development GHG emissions with fossil fuel emissions in Uniper's proposal is based on an assumption that only fossil fuels or energy from waste can provide electricity flexibly. This is a false assumption. Natural gas is currently used as a flexible electricity source within a broad mix of supplies to the National Grid. Moreover the National Infrastructure Commission has proposed as recently as August 2020 that the proportion of onshore wind, offshore wind and solar be increased to 65% by 2030 (ref 10). Development of hydrogen technology is strongly recommended by both the National Infrastructure Commission and the Committee on Climate Change (ref 11) to provide additional flexibility as well as very low carbon to the grid. In accordance with Net Zero planning objectives and contrary to Uniper's assertion, energy from waste is not needed to fill this role.

Other waste treatments and methane release in landfill

DEFRA figures (ref 12, Table 7) show that that the principal landfill gas emissions are from food, paper and card (75% of methane emissions), which could be diverted to anaerobic digestors to produce heat, power and fertiliser. Anaerobic digestors can also take a proportion of mixed waste. This is a crucial point, as Uniper's case for the carbon emission superiority of the proposed development rests largely on the unburned methane emissions from landfill: these contribute hugely to the greenhouse effect because methane is about 25 times more potent than CO2 as a greenhouse gas.

Short Cycle Carbon

Most carbon footprint analyses draw a distinction between fossil fuel carbon (which was underground for millions of years and has only just re-entered the carbon cycle) and short cycle carbon (waste from plants and trees which absorbs CO2 from the air when growing and releases it when decaying or burning). Up until adoption of the Net Zero target, short cycle carbon has tended to be excluded from calculations, as has been the case for Uniper's calculations in this application. However, as recognised by the Committee on Climate Change, there is a growing need to increase the storage of carbon in the soil (ref 11, page 124). This can be achieved through anaerobic digestion to create compost which can be incorporated into the soil to sustain the billions of soil microorganisms that in turn feed growing plants without the need for the mineral fertilisers that are destroying our soil.

Additional future upgrades

Uniper inform us that their facility will be capable of providing heat to the surrounding area, and thus add to the cleverness and prestige of the proposed hub. But what exactly is on offer? There are serious flaws with this proposal which should be of importance to Councillors. Using waste heat directly can be >90% energy efficient. Converting it to electricity, for onward use as heat and power delivers only around 30% efficiency. If an incinerator is built to last 20-25 years but the houses built to use the heat are expected to last longer, what will happen then? Will the incinerator need to be kept on to keep the houses heated, or will residents be expected to convert to another source of heat at considerable cost? Would those receiving the heat be 'locked in' to paying for that heat, will they pay a fair market price

compared to other options? Could they end up in fuel poverty? And how would any of this be compatible with net zero targets?

Suggestions of additional future upgrades in Uniper's proposal comprise an analysis, as requested in the County Council Scoping letter, of how the proposed development might become a net zero carbon emitter by 2050. As with the heat proposal above, references to future upgrades have no substance (App 8.4, s4.2). It has been pointed out to me that you couldn't sell a half built house saying it was 'roof ready' or an unfinished car, marketed as 'brake ready'.

In summary, incineration can seem like the most economic pathway for waste disposal because the environmental cost of burning that waste or the environmental benefits of reduction, re-use, recycling and composting are yet to be fully reflected in policy and pricing. However, these are false economies that will necessarily be rectified within the early years of the lifespan of a new incinerator because of the Net Zero amendment to the Climate Change Act and additional legislation anticipated in the very near future, such as the current Environment Bill. Such false economies should not be relied upon to justify a Council committing to long-term incineration contracts that would then pose a barrier to recycling waste materials. From the point of view of the Council's reputation in helping to build a green energy hub, the Uniper proposal would provide high carbon energy and encourage waste production in a manner that ignores multiple innovative strategies for both energy and waste. It is a monstrous white elephant.

Yours sincerely

3rd party data

References

(1) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf .

(2) https://www.gov.uk/government/publications/environment-bill-2020/10-mar ch-2020-waste-and-resource-efficiency-factsheet-part-3.

(3) https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.

(4) https://www.eunomia.co.uk/reports-tools/residual-waste-infrastructure-review-12th-issue/.

(5) https://www.local.gov.uk/sites/default/files/documents/6.3091_DEFRA_AirQualityGuide_9web_0.pdf

(6) https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.

(7) https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf.

(8) https://cr.uniper.energy/?gclid=EAIaIQobChMIzMmHyu2z6wIVz9_tCh2F9ApHEAAYASACEgJLWPD_BwE

(9) https://www.ciwm.co.uk/ciwm/knowledge/the-r1-energy-efficiency-formula.aspx (2009).

(10) https://www.nic.org.uk/wp-content/uploads/Final-Renewables-Recovery-Reaching-Net-Zero.pdf.

(11) https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/

(12) http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=19019 (2013).

3rd party data

Sent: 15 September 2020 20:24
To: development management
3rd party data
Subject: ES/4154 Ratcliffe on Soar power station
Attachments: UKWIN Ratcliffe Objection ES-4154 (25 August 2020).pdf

3rd party data

Thanks for getting in touch earlier.

Below is my submission for the planning application ES/4154 Ratcliffe on Soar power station, with supplementary document from UKWIN attached.

3rd party data

I'm writing in objection to this proposal for the Uniper EMERGE facility on the site of the Ratcliffe on Soar power station, reference ES/4154.

3rd party data am writing in this capacity on behalf of Rushcliffe Green Party, those I represent, and many other people across the borough who have contacted me to express their concerns at this proposed development.

I've attached a detailed submission from the UKWIN campaign group that goes into great depth on the matter and I concur with & support their findings.

Climate Change is an established fact and it is essential that firm and radical action is taken to halt and reverse this. This cannot be done by continuing to burn waste material, it is entirely the wrong approach to take.

It is necessary that all material output from human activity be capable of being re-used, re-purposed, repaired and ultimately recycled. Where such materials are not created with this in mind their production should end and alternatives be used.

The overwhelming need going forward is to reduce and eliminate waste, a need recognised by the government and all political parties. This proposal to build a large scale incinerator that will require vast quantities of waste still to be generated to support its operation is therefore contrary to actions needed to prevent climate change.

The scale of the proposed development indicates that waste will be brought in from a wide area necessitating a large number of daily vehicle movements, with deliveries by HGVs and/or rail. Either way this will mean still more pollution and generation of CO2 to collect and transport waste to the incinerator.

Continued incineration of waste, however dressed up as "energy from waste" is not a route that we can afford to take. The proposal will be a contradiction in concrete form, a monument to failure. Please reject this application.

Kind regards,

3rd party data

[redacted]

UNITED KINGDOM WITHOUT INCINERATION NETWORK

UKWIN
PLANNING OBJECTION

Proposed Development:
East Midlands Energy Re-Generation (EMERGE) Centre and associated infrastructure

Proposed Location:
Ratcliffe-on-Soar Power Station, Nottingham, Ratcliffe-on-Soar, NG11 0EE

Applicant:
Uniper UK Limited

Nottinghamshire County Council Planning Reference:
ES/4154

August 2020

INTRODUCTION

1. The United Kingdom Without Incineration Network (UKWIN) was founded in March 2007 to promote sustainable waste management.
2. The East Midlands Energy Re-Generation (EMERGE) incinerator proposal conflicts with various local and national planning policies and objectives.
3. This submission identifies some key conflicts with the Nottingham and Nottinghamshire Waste Core Strategy.
4. This submission focuses on three main areas of concern:
    - The adverse climate change impact of the proposed EMERGE incinerator;
    - The need, or otherwise, for the proposed EMERGE incinerator capacity (of between circa 472,100 and 524,550 tonnes per annum) and associated adverse impacts; and
    - The adverse impacts of the proposed EMERGE incinerator on visual amenity and the actual and perceived openness of the green belt.
5. **UKWIN objects to this proposal**, and calls upon Nottinghamshire County Council to **refuse** the planning application.

NOTTINGHAMSHIRE WASTE CORE STRATEGY (WCS)

WCS3: Future waste management provision

6. WCS Policy WCS3 states that:

> "*Future waste management proposals should accord with our aim to achieve 70% recycling or composting of all waste by 2025...Proposals will therefore be assessed as follows: ...b) new or extended energy recovery facilities will be permitted only where it can be shown that this would divert waste that would otherwise need to be disposed of and the heat and/or power generated can be used locally or fed into the national grid; ...*"

7. The applicant has not shown that their proposed EMERGE incinerator would divert waste that would otherwise need to be disposed of. As noted below, the facility might take waste from existing incinerators (e.g. Eastcroft and Sheffield), and emerging NSIPs (e.g. Boston and North Lincolnshire), and from recycling.

8. Diverting feedstock from existing (and emerging) incinerators does not meet the WCS3(b) policy requirement because it would not be diverting "*waste that would otherwise need to be disposed of."*

9. Burning substantial quantities of Lincolnshire's waste in Nottinghamshire instead of Lincolnshire does nothing to move waste management up the waste hierarchy.

10. The EMERGE incinerator application fails to demonstrate that their proposal would be compatible with the achievement of the WCS3 70% recycling target (or even the Government's 65% recycling target).

11. Furthermore, the applicant has not shown that sufficient feedstock would be made available to them from within Nottingham and Nottinghamshire for the duration of the planning permission to prevent reliance on importing significant quantities of waste from outside of the Plan area to be used as feedstock.

12. We also note that the connection to the power grid does not form part of the planning application and as such without planning controls it cannot be ensured that energy would *"be used locally or fed into the national grid".*

13. As such, for these reasons which are set out in more detail below, the proposal should be determined on the basis that it conflicts with Nottinghamshire and Waste Core Strategy Policy WCS3.

WCS12: Managing non-local waste

14. WCS Policy WCS12 states that:

> *"Waste management proposals which are likely to treat or dispose of waste from areas outside Nottinghamshire and Nottingham will be permitted where they demonstrate that: a) the envisaged facility makes a significant contribution to the movement of waste up the waste hierarchy, or b) there are no facilities or potential sites in more sustainable locations in relation to the anticipated source of the identified waste stream, or c) there are wider social, economic or environmental sustainability benefits that clearly support the proposal."*

15. Whilst it appears that the EMERGE incinerator is likely to treat waste from outside Nottingham and Nottinghamshire, the applicant has not demonstrated that the proposal meets any of the three criteria relating to the treatment of non-local waste.

16. In relation to (a), the facility appears more likely to divert waste from other incinerators and from recycling facilities than from landfill, and therefore and the applicant has not shown that their proposal would make a significant contribution to the movement of waste up the waste hierarchy.

17. In relation to (b), the applicant does not appear to have carried out any alternative site appraisal and nor have they shown that there are no facilities or potential sites in more sustainable locations in relation to the anticipated source of the identified waste stream.

18. In relation to (c), the applicant has not demonstrated that there are wider social, economic or environmental sustainability benefits that clearly support the proposal. As noted below, for example, the claimed climate change benefits assume waste would otherwise be sent untreated to landfill when this is not a realistic prospect, and even then the applicant acknowledges that the EMERGE incineration plant could perform worse than landfill in terms of GHG emissions.

19. For the size of the proposed development site, the number of jobs claimed is relatively low given the land take of the facility, and a far greater number of jobs accompanied by other social and economic benefits would be created through investment in recycling to meet the Waste Core Strategy's 70% recycling target - a target which could be undermined by this proposal.

20. We note the WCS Performance Indicator: *"New facilities located in accordance with criteria set"* and associated target of *"100% of permitted facilities meet WCS12 Criteria"*. This proposal does not accord with the criteria and would therefore go against the WCS target.

21. For reasons outlined above, and set out in more detail below, the proposal should be determined on the basis that it conflicts with Nottinghamshire and Waste Core Strategy Policy WCS12.

WCS4: Broad locations for waste treatment facilities

22. WCS Policy WCS4 states that:

> *"Large-scale waste treatment facilities will be supported in, or close to, the built up areas of Nottingham and Mansfield/Ashfield...In the Green Belt proposals for built waste management facilities would constitute inappropriate development and will be permitted only where need and other material considerations amount to very special circumstances sufficient to outweigh harm to the Green Belt and any other harm identified."*

23. The proposed EMERGE incinerator constitutes inappropriate development in the Green Belt and would be a large scale facility which is not in, or close to, the built up areas of Nottingham and Mansfield/Ashfield.

24. The applicant has not demonstrated that need and other material considerations amount to 'very special circumstances' sufficient to outweigh any harm to the Green Belt and any other harm identified.

25. We note the WCS target of "100% meeting broad location criteria".

26. This proposal should be determined on the basis that it conflicts with Nottinghamshire and Waste Core Strategy Policy WCS4 as this proposal fails to meet the broad locational criteria as set out in WCS Policy WCS4. The development would instead constitute unjustified inappropriate development in the Green Belt.

WCS14: Managing Climate Change

27. WCS policy WCS14 states:

> *"All new…waste management facilities should be located, designed and operated so as to minimise any potential impacts on…climate change."*

28. The performance indicator for policy WCS14 is that: *"Proposals judged to have unacceptable impact on climate change refused".*

29. As set out below, the EMERGE incinerator proposal would have an unacceptable impact on climate change and should therefore be refused in line with Policy WCS14.

ADVERSE CLIMATE CHANGE IMPACTS OF THE PROPOSAL

30. For the reasons set out below, UKWIN believes that the proposed EMERGE incinerator would have a net adverse climate change impact, as it would result in the release of more greenhouse gasses (GHGs) when compared with sending the same waste to landfill. More generally, the applicant's claims of climate change benefits do not stand up to scrutiny.

31. The applicant attempts to make much of the proposal's supposed climate credentials. For example, in their Pre-Application Request (Appendix 1-1) they boast of the proposed facility's ability to "*Provide low carbon and partially renewable energy, both power and heat, to the future industry and manufacturing uses planned for the site*" (emphasis added).

32. However, the proposal is modelled on an assumption of high carbon intensity, and is reliant on fossil fuels such as plastic for feedstock. The likelihood of exporting significant quantities of heat is 'uncertain' at best.

33. Furthermore, the applicant has not demonstrated that their proposed EMERGE incineration facility has been sized and located so as to minimise travel distances and the associated climate change impacts of road transport.

34. As can be seen from UKWIN's section on need (below), the proposed EMERGE incinerator could be reliant upon the importation from outside the County of significant quantities of non-local waste which would be transported over considerable distances, potentially passing one or more incinerators en route.

35. The applicant's assessment acknowledges how the incinerator could deliver a worse climate outcome than sending the same material, untreated, to landfill.

36. The applicant's Environmental Statement (ES), Volume 3, Appendix 8-4 (Carbon Assessment and Sustainability) includes Table 18: Sensitivity to assumptions regarding sequestration and DDOC, which shows that the proposal could result in a net disbenefit of being between 19,019 tonnes of CO_2 per annum worse than sending waste to landfill under a 'Low NCV' feedstock and 27,718 tonnes of CO_2 per annum worse than landfill under the 'Expected NCV' feedstock.

37. Whilst the applicant tries to argue that these scenarios are somehow 'pessimistic', there are actually grounds to conclude that the applicant's assumptions are overly optimistic, and that actual adverse impacts could be significantly more than 28,000 tonnes of CO_2 per annum worse than landfill.

38. For example, the applicant invites us to assume that the waste used as a comparator would be sent untreated directly to landfill without first being bio-stabilised. This is implausible as the treatment of this material is far more likely to be in line with the Government's move to Net Zero by 2050, meaning waste would be bio-stabilised prior to landfill.

39. Bio-stabilisation renders material virtually inert, meaning hardly any methane would be emitted, and the overwhelming majority of biogenic carbon would be sequestered (in line with Defra analysis[1]).

40. Furthermore, the applicant's use of CCGT as their comparator for the purpose of assessing the carbon intensity of the displaced energy unfairly favours incineration relative to using an assumption that is consistent with Government guidance to use the Marginal Emissions Factor (MEF).[2]

41. At Paragraph 4.8.2 of their Main Report (ES Volume 1) the applicant states:

> "*Decarbonisation of an energy recovery facility such as the Proposed Development can be achieved via either decarbonising the waste fuel or capturing CO2 from the flue gases arising from combustion, or through a combination of both. The Climate Change Committee (CCC) report supporting the Government's 2050 net zero target recommends specific policy options aimed at reducing both the plastic and biogenic content of waste, which is expected to deliver significant additional decarbonisation of the waste stream when implemented.*"

42. This raises a number of questions, including:

- If both the Government and the CCC are calling for reductions in both the plastic and biogenic content of waste, what combustible material will be left to be used as feedstock for the EMERGE incinerator?
- Where does the applicant's need analysis reflect a scenario whereby the proposed facility (and potentially other incinerators competing for the same reduced feedstock) avoids up to 100% of plastic and food waste (which currently makes up a significant proportion of the residual waste stream relied upon by all waste incinerators), e.g. with respect to the volume of paper and card that would be available to them from within the WCS Plan Area and within a 2-hour journey from the proposed facility?

43. With respect to the applicant's assumptions that there could be the removal of up to 100% of food waste and up to 100% of plastics from the incoming waste stream, it appears that the applicant is assuming that the EMERGE incinerator could be burning significant quantities of paper and card, i.e. material which could be recycled (or composted) and which in any case is unlikely to rot in landfill (and therefore unlikely to emit methane) even without bio-stabilisation.

---

[1] 'The Economics of Waste and Waste Policy Waste Economics Team Environment and Growth Economics, Defra, June 2011' states: *"MBT (mechanical biological treatment)-landfill provides the best emissions performance in terms of the treatment/disposal of residual waste. It essentially involves landfilling somewhat stabilised wastes with some material recovery. The magnitude of the environmental impact depends on the extent to which the waste is stabilised".* Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69500/pb13548-economic-principles-wr110613.pdf

[2] For details see: https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf and the various Government statements set out in that document. This report also sets out the need to account for biogenic carbon sequestration in landfill. Whist the applicant takes account of biogenic carbon sequestration, e.g. in ES Volume 3, Appendix 8-4, Table 18, they do not do so for their main analysis.

44. It appears that the applicant's need analysis fails to account for the potentially significant impact with respect to feedstock availability implied by their 'potential improvements associated with decarbonisation of the waste stream'.

45. It is also worth noting that in June 2020 the Climate Change Committee (CCC) called for an increase in separate waste collections and in new recycling, anaerobic digestion (AD) and composting facilities, noting that it is important not to "*lock in GHGs or increased risk*" (associated with waste incineration) setting out how increased reuse and increased recycling are needed "*to prevent lock-in of fossil emissions from waste incineration*".[3]

46. The CCC calls upon the Government to set a target for England of 70% recycling by 2030[4] and for Local Authority plans to be implemented to go beyond 70% recycling rates by the 2030's.[5]

47. It becomes clear that the CCC does not envisage the need for new waste incineration capacity that would extend its operations beyond 2030 as the way to address greenhouse gas (GHG) emissions.

48. Overcapacity of incineration jeopardises the achievement of the Government's decarbonisation ambitions, and therefore represents an increased risk to the achievement of Net Zero by 2050.

49. In addition to potentially diverting waste from MBT-Landfill and from recycling, there is also the potential that the proposed incinerator could divert residual waste from other incinerators.

50. This prospect is explored in more detail in the section on need (below), but it is relevant to note that the proposed EMERGE incinerator is about a 1 hour's drive from the Bernard Road incinerator in Sheffield and is less than half an hour by car from the Eastcroft incinerator in Nottingham.

51. Both of these operational incinerators are part of vast district heating schemes, meaning that if waste is diverted from these plants it could mean that the feedstock is treated at an electricity-only incinerator when it would otherwise be treated at a combined heat and power (CHP) plant. Such a situation would be highly undesirable from a climate change perspective.

52. The applicant's references to carbon capture technology are not accompanied by a commitment, e.g. a suggested planning condition or unilateral undertaking. They appear to be reliant upon the hope of external Government funding that has not been secured and is not on offer.

[3] Page 156 of *'Reducing UK emissions: Progress Report to Parliament'*, June 2020. Available from: https://www.theccc.org.uk/wp-content/uploads/2020/06/Reducing-UK-emissions-Progress-Report-to-Parliament-Committee-on-Cli.._-002-1.pdf
[4] *Ibid*., page 34
[5] *Ibid*., page 58

53. A recently-released report from Catapult indicates that the cost of retrofitting carbon capture technology to a 350,000 tonne per annum waste incinerator could cost around £100m to install and a further £4m per annum to operate, which would equate to around £220m over the 30-year lifetime of a typical incinerator.[6]

54. The Carbon Capture report also states that: *"...In the case of EfW, the capture plant does lose some ability to export power and therefore loses some revenue*". The applicant failed to model the reduced level of electricity export associated with such a retrofit.

55. In addition to the cost implications and the power export reduction, there are further risks and potential impacts associated with retrofitting carbon capture technology to EfW plants. For example, on pages 11 and 12 of their report Catapult identifies a series of 'Negative factors' for consideration, such as:

> "***Susceptibility to feedstock 'Impurities'****: The CCUS [carbon capture utilisation and storage] solvent is susceptible to degradation from many types of contaminant. It is not yet known if EfW flue gas when operated at full scale over long periods produces problems of this type. This technology risk is likely to have a negative impact on investment appetite, until operational experience is gained.*"

56. On page 24 of the applicant's Carbon Assessment (Appendix 8-4) we read:

- *"The carbon capture plant requires a significant amount of energy, in the form of steam, for the regeneration of the solvent and liberation of the product CO2. The final compression and treatment (for pipe transport or liquefaction) of captured CO2 also requires significant electrical power.*
- *"Finally, there will also be increases in cooling demand, water consumption and other utilities. There will also be additional consumption of other chemicals. The exact magnitude of these increases will depend on the capture process used and the extent of integration with the power island.*
- *"It should also be said that the application of post combustion capture is not widespread, and in particular not on waste fired plant, so there may some risks associated with excessive consumption of solvents used, due to trace constituents in the flue gas, and potentially also plant corrosion. These facets would require further investigation."; and*

[6] *'Energy from Waste Plants with Carbon Capture - A Preliminary Assessment of Their Potential Value to the Decarbonisation of the UK'*, Catapult Energy Systems, May 2020. Available from: https://es.catapult.org.uk/reports/energy-from-waste-plants-with-carbon-capture/

- *"The capital cost of a capture plant would add significantly to that of the overall development. For context, the ROAD project, one of Europe's furthest developed CO2 capture projects and which was developed by Uniper in joint venture, would have cost between €185 million and €230 million in 2017 (plus Owner's costs), for a plant sized to capture 169 tphCO_2 (with perhaps an additional 25–55 % of other integration costs). A smaller scale system, of the size required for the Proposed Development, might be relatively more costly due to economies of scale. However, at this scale the potential is opened up to make greater use of modularisation in design and build, and perhaps of common plant item designs.*
- *"Operating costs are also significant for CCS plant. When taking into account the maintenance, staffing, chemicals and energy costs (the latter being the greatest), based again on the ROAD project, the operating costs might be in the region of €25/teCO2. These costs are discussed further in the ROAD close-out report [18]. Further additional costs might be incurred for use of a CO_2 transport system and storage, if not sold to the industrial sector."*

57. The conclusions to be drawn from the applicant's statements regarding the prospect of 'decarbonising' their proposed incinerator is that the opportunities they cite rely upon factors outside of their control; that these 'opportunities' are accompanied by adverse impacts and other implications that have not been fully assessed by the applicant; and that the process could require substantial financial investment that to date no party has offered to provide.

58. This means that the applicant's fanciful decarbonisation claims should be afforded little or no weight in the planning balance. This also means that serious concerns about the proposal's compatibility with Net Zero 2050 should weigh heavily against the proposal, especially as they are seeking permanent planning permission for a development which could operate well beyond 2050.

59. One possibility is that the applicant could transform their application into one for temporary planning permission until 2040, with the option of applying for an extension to this consent were they able to find a workable and viable means by which to be consistent with the Government's commitments to meet the legally binding Net Zero 2050 target, abide by the Paris Climate Agreement, and decarbonise the electricity supply.

60. The aforementioned Catapult report explains how: "*In terms of sustainability, unabated EfW power plants produce power of carbon intensity around 600g/kWh (excluding biogenic carbon). This is about 50% higher than a typical CCGT, and already higher than the current grid average intensity which is around 220 g/kWh. Assuming that the decarbonisation of the power sector continues as expected, by 2030 the carbon intensity of unabated EfW will be significantly higher than grid average, further weakening their attractiveness*".

61. At 4.2.1 of the applicant's ES Volume 3, Appendix 8-4 (Carbon Assessment and Sustainability) the applicant concedes that their facility would be a high-carbon development when compared with CCGT, offering carbon intensity figures for the EMERGE incinerator of "*around 560 gCO_2/kWh*" which they acknowledge is "*higher than CCGTs (349 gCO_2/kWh)*".

62. As shown in Table 19 of the applicant's ES Volume 3, Appendix 8-4, even if all of the food and plastic were to be removed from the EMERGE incinerator's feedstock, the carbon intensity of the energy generated by the incinerator (379 gCO_2/kWh excluding biogenic CO_2) would still be higher than CCGT.

THE NEED OR OTHERWISE FOR THE PROPOSED CAPACITY

63. The EMERGE planning application overestimates levels of future residual waste arisings and underestimates residual waste treatment capacity. It fails to adequately explore the locational, waste hierarchy and feedstock implications of the likely future waste context.

Residual waste arisings

64. At pages 16 and 17 of the Planning Statement the applicant claims that:

> *"The 70 % recycling target, whilst admirable, is proving elusive…there would need to be significant financial investment (at a time when local authorities are under severe economic pressure) and radical policy intervention to materially increase recycling levels."*

65. Firstly, we note that in October 2013 the Local Plan Inspector Susan Holland found that:

> *"The overall target of adopted by the WCS* [Waste Core Strategy] *for the recycling or composting of 70% of municipal, commercial & industrial, and construction & demolition waste by 2025 is balanced and realistic."*

66. Secondly, we note that the Government is bringing forward what the applicant refers to as "*significant financial investment…and radical policy intervention to materially increase recycling levels".*

67. The most recent document to reaffirm this Government commitment is the draft replacement Waste Management Plan for England (WMPE), released for consultation on 20th August 2020.[7]

68. The main replacement WMPE document states:

> *"In February 2019 the Government published a consultation on measures to increase recycling from households and businesses to support the achievement of a much higher 65% recycling rate for municipal waste by 2035. Consultation on these proposals closed on 13 May 2019 and Government published a summary of its response to the consultation on 23 July 2019. This states that, the Government will introduce measures for England to increase household recycling by requiring all local authorities to collect a consistent set of dry materials from households in England; to collect food waste separately from all households on a weekly basis; and to arrange for garden waste collection where necessary. These measures are expected to increase recycling from households from current levels to 65% by 2035. This will support our ability to meet commitments on recycling outlined in the Resources and Waste Strategy."* (emphasis added)

[7] https://consult.defra.gov.uk/waste-and-recycling/waste-management-plan-for-england/supporting_documents/Waste%20Management%20Plan%20for%20England.pdf

69. According to Defra's associated Environmental Report[8] the draft 2019 WMPE contains *"explicit commitments, drawn from other document such as the RWS* [Resource and Waste Strategy]*"* and lists these, including:

    - "We will continue to work with local authorities [Environment Report's underlining] to increase household recycling in the short-term to achieve 50% by 2020." (page 12)
    - "The Government will introduce measures for England to increase household recycling by requiring all local authorities to collect a consistent set of dry materials from households in England; to collect food waste separately from all households on a weekly basis; and to arrange for garden waste collection where necessary. These measures, together with reforms to municipal business recycling are expected to increase municipal recycling from current levels to 65% by 2035." (page 21)
    - "We have committed to funding the net costs of new burdens on local authorities arising from new statutory duties introduced to increase consistency in recycling and we will work with local government bodies to develop our assessment of costs and changes necessary." (page 39)

70. As such, the Government intends to bring in new measures to boost recycling, and they have committed to funding these measures (both directly and through schemes such as extended producer responsibility), and the Government expects these measures will result in 65% recycling for municipal waste in England by 2035.

71. Some of these measures have already been published in draft form, e.g. in the Environment Bill.

72. As noted above, in June 2020 the CCC recommended that the Government adopt a more ambitious target of 70% recycling by 2030.

73. The same CCC report also notes, on page 183, that:

    "*Achieving significant emission reductions in the waste sector requires a step-change towards a circular economy, moving away from landfill and incineration (and the associated methane and fossil CO_2 emissions), and towards a reduction in waste arisings and collection of separated valuable resources for re-use and recycling. This applies at local, regional and national levels*." (emphasis added)

74. In the House of Commons on 28th March 2019 John Grogan MP questioned Michael Gove, saying:

    "Most studies now indicate that we have an excess of incineration capacity to deal with residual waste. Is there not a danger that, if we build more incinerators, waste that would otherwise be recycled will be diverted to those incinerators?" and the then Environment Secretary acknowledged this by responding: *"That is a fair point".*

[8] https://consult.defra.gov.uk/waste-and-recycling/waste-management-plan-for-england/supporting_documents/Environmental%20Report.pdf

75. On 12th September 2018 the UK Government's Resource Minister Thérèse Coffey gave oral evidence to the Environmental Audit Committee where she stated:

    - *"…the [European] Commission itself is very concerned about the explosion, if you like, of incineration around the European Union. It does not want to massively encourage it in the future. Some countries incinerate almost all of their waste, or they are reaching that very high level. I am not convinced that in respecting the waste hierarchy, we want to massively increase the amount of incineration that we are doing..."*
    - *"I think, actually, there is sufficient capacity out there for incineration. Often what happens with policies is that they come out with unintended consequences. The general view I get from the [European] Commission in the report they did is that we now have too much incineration across the European Union, and we need to do more to refocus on recycling…"*

76. On 28th January 2020 Rebecca Pow, speaking on behalf of the Government as the Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs, told a Westminster Hall debate:

    "…we seek to minimise the amount of waste that goes to incineration or landfill" [9]

77. On 12th February 2020 Rebecca Pow, speaking on behalf of the Government as the Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs, told a Westminster Hall debate:

    "…the measures in the resources and waste strategy and the Environment Bill will enable a paradigm shift, in relation to reducing, reusing and recycling our waste, that should limit the amount that ever has to go to incineration and landfill. I hope that, from what I have said, hon. Members understand what is happening, the direction that the Government are absolutely committed to, and the move to a circular economy." (emphasis added)

78. As such, not only has the Government confirmed their commitment to, and expectation of achieving, a 65% recycling target, but they acknowledge that it is fair to say that incineration overcapacity has the potential to harm recycling.

79. Indeed, in recognition of the ability of incineration to come at the expense of recycling, the Government has warned that if their proposed measures are unsuccessful then they will consider introducing an incineration tax to divert waste from incineration to recycling.

[9] Hansard - Westminster Hall debate on Industrial and Commercial Waste Incineration (UK Parliament, 28 January 2020). Available from: https://hansard.parliament.uk/Commons/2020-01-28/debates/9209AD6A-6C6B-47CB-A460-5147EC43131F/IndustrialAndCommercialWasteIncineration

80. To quote the Government's October 2018 budget: *"…the government wants to maximise the amount of waste sent to recycling instead of incineration and landfill. Should wider policies not deliver the government's waste ambitions in the future, it will consider the introduction of a tax on the incineration of waste…"* [10] (emphasis added)

81. This position has subsequently been restated and reaffirmed by various Government ministers.

82. The link between recycling underperformance and an intervention relating to discouraging incineration is not surprising, as a significant proportion of the current residual waste stream used as incinerator feedstock is recyclable, and much of the non-recyclable elements in the residual waste stream are substitutable.

83. According to Defra's August 2020 report entitled *'Resources and waste strategy for England: monitoring and evaluation'*:[11]

- *"The large amount of avoidable residual waste and avoidable residual plastic waste generated by household sources each year suggests there remains substantial opportunity for increased recycling."*
- *"The message from this assessment is that a substantial quantity of material appears to be going into the residual waste stream, where it could have at least been recycled or dealt with higher up the waste hierarchy."*
- *"Of total residual waste from household sources in England in 2017, an estimated 53% could be categorised as readily recyclable, 27% as potentially recyclable, 12% as potentially substitutable and 8% as difficult to either recycle or substitute."*
- *"Of approximately 13.1 million tonnes of residual waste generated by household sources in England in 2017, around 7 million tonnes could be categorised as readily recyclable, 3.5 million tonnes as potentially recyclable, 1.6 million tonnes as potentially substitutable, and 1.0 million tonnes as difficult to recycle or substitute. All figures are estimates."*

84. A Welsh WRAP study similarly found that up to nearly 77% of residual Commercial & Industrial (C&I) waste in Wales in 2019 could have been recycled, stating:

> "*The majority of the [residual C&I] waste analysed (74.5% (+/- 2.4%) or 450,478 tonnes annually) could have potentially been recycled*".[12]

[10] Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752202/Budget_2018_red_web.pdf

[11] Available from: https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england-monitoring-and-evaluation

[12] Available from: http://www.wrapcymru.org.uk/reports/composition-analysis-commercial-and-industrial-waste-wales

Residual waste treatment capacity

85. The applicant has adopted a 2-hour isochrone for their feedstock availability assessment.

86. It should be noted that, generally speaking, 1 tonne of Refuse Derived Fuel (RDF) requires the dewatering of approximately 1.33 tonnes of 'raw' waste.

87. At Paragraph 2.4.31 of the Main Report of the applicant's Environmental Statement (Volume 1) we read how the applicant undertook a search "*on the Planning Inspectorate website to identify…any Nationally Significant Infrastructure Projects (NSIPs)*".

88. The applicant's NSIPs search failed to identify the proposal for the Boston Alternative Energy Facility (BAEF). It should be noted that the proposed BAEF would be located circa 1 hour and 40 minutes away from the proposed EMERGE incinerator, and that the Boston facility would be capable of processing 1 million tonnes of RDF[13] (which would require the dewatering of approximately 1,330,000 tonnes of 'raw' waste) to generate 102MW of energy (gross).

89. The applicant's NSIPs search also failed to identify the proposal for the North Lincolnshire Green Energy Park. It should be noted that the proposed North Lincolnshire Green Energy Park would be located circa 1 hour and 30 minutes away from the proposed EMERGE incinerator, and that the North Lincolnshire facility would be capable of processing 650,000 tonnes of RDF[14] (which would require the dewatering of approximately 865,000 tonnes of 'raw' waste) to generate 95MW of energy (gross).

90. Additionally, the applicant's NSIPs search also failed to identify the award of planning permission for Ferrybridge Multifuel 2 (FM2), a Development Consent Order for which was approved in October 2015.[15] Both FM2 and FM1 are located in Knottingley, circa 1 hour and 30 minutes away from the proposed EMERGE incinerator. FM1 and FM2 have a combined capacity of 1.35 million tonnes of waste (primarily as RDF and/or SRF - which would require the dewatering of approximately 1,800,000 tonnes of 'raw' waste) with a combined electrical generating capacity of 180MW (gross).

91. Therefore, with respect only to NSIPs, the applicant seems to have failed to identify existing and emerging incineration capacity to treat approximately 2.67 million tonnes of waste across three locations all of which are within the applicant's 2-hour isochrone. The applicant's failure to identify these substantial and obviously relevant Nationally Significant Infrastructure Project proposals casts further doubt regarding the applicant's claim that the capacity they are proposing for the EMEGRE incinerator is needed to divert waste from landfill.

[13] See: https://infrastructure.planninginspectorate.gov.uk/projects/north-east/boston-alternative-energy-facility-baef/?ipcsection=overview and: https://www.bostonaef.co.uk/
[14] See: https://infrastructure.planninginspectorate.gov.uk/projects/yorkshire-and-the-humber/north-lincolnshire-green-energy-park/ and: https://northlincolnshiregreenenergypark.co.uk/
[15] See: https://infrastructure.planninginspectorate.gov.uk/projects/yorkshire-and-the-humber/ferrybridge-multifuel-2-fm2-power-station/ and: https://multifuelenergy.com/

92. In addition to this NSIP capacity, there is nearly a further 5 million tonnes of existing incineration capacity within the applicant's 2-hour isochrone. Facilities included in this circa 5 million tonne figure are listed in the following table:

Incinerator	Location	Distance from NG11 0EE	Capacity
Newhurst Energy Recovery Facility (under construction)	Newhurst Quarry, Shepshed (near Loughborough)	Less than 30 minutes	350,000
Baddesley Energy from Waste Facility	Off Merevale Lane, Baxterly, Atherstone	Less than 40 minutes	103,000 (RDF) 137,000 raw waste
Stoke Energy from Waste Facility	Campbell Road, Sideway, Stoke-on-Trent	Less than 1 hour 30 minutes	210,000
Kirklees Energy from Waste Facility	Vine Street, Huddersfield, Kirklees	Less than 2 hours	210,000
Newlincs Grimsby Incinerator	South Marsh Road, Stallingborough, Grimsby	Less than 2 hours	56,000
Lincolnshire Energy from Waste Facility	Whisby Road, North Hykeham, Lincoln	1 hour	190,000
Peterborough CC EFW Plant	Fourth Drove, Fengate, Peterborough	1 hour 30 minutes	85,000
Greatmoor EfW	Lower Greatmoor Farm, Edgcott, Aylesbury	Less than 2 hours	345,000
Staffordshire ERF	The Dell, Enterprise Drive, Four Ashes near Cannock	1 hour	340,000
Sheffield ERF	Bernard Road, Sheffield	1 hour	245,000

Battlefield ERF	Battlefield Enterprise Park, Shrewsbury	1 hour 30 minutes	102,000
Runcorn EFW Facility	Picow Road Farm, Weston Point, Runcorn	Less than 2 hours	1,100,000
Dudley Energy from Waste Facility	Lister Road, Dudley	Less than 1 hour 30 minutes	105,000
Wolverhampton Energy from Waste Plant	Crown Street, Wolverhampton	Less than 1 hour 30 minutes	118,000
Tysely Energy from Waste Facility	James Road, Tyesley, Birmingham	Less than 1 hour 30 minutes	400,000
Coventry ERF	Bar Road, Coventry	1 hour	315,000
Milton Keynes Waste Recovery Park	Dickens Road, Old Wolverton	1 hour 45 minutes	93,600
Ardley EFW Plant,	Ardley, Oxfordshire	1 hour 30 minutes	326,300
Javelin Park	Javelin Park, Haresfield	2 hours	190,000

93. The facilities listed in the table above do not include all of the emerging incinerators currently under construction within a 2-hour isochrone of the proposed EMERGE incinerator.

94. In their Planning Statement, at Paragraphs 3.3.13 and 3.3.26, the applicant refers to a Tolvik study published in February 2019. This document is not available in the public domain and is not included with the current planning application. As such, no weight should be given to this document in the planning balance.

95. At Paragraph 3.3.28 of their Planning Statement, the applicant refers to a Tolvik study that they commissioned, as follows:

> *"…Uniper commissioned Tolvik to carry out a residual waste market review to evaluate the availability of waste using a circa 2-hour drive time catchment area from the Power Station site. This review concluded that there is forecast to be a 1.52 million tpa residual waste treatment capacity gap in 2035 (under a Median scenario), based on forecast residual waste arisings and known EfW facilities either fully operational or under construction"*

96. This statement raises some obvious questions, not least questions about where this review can be found, and when was it conducted, the full set of inputs and assumptions that were made to inform the study, and any caveats or cautions acknowledged by the authors of the study.

97. As the Tolvik study referred to at Paragraph 3.3.28 of the Planning Statement is not available for scrutiny, no weight should be given to the study's partially-quoted conclusion in the planning balance.

98. The study was carried out by Tolvik. As such it may be relevant to note the recently published article written by Tolvik's Director, Adrian Judge.

99. The opinion piece, published on the 19th August 2020 on the *letsrecycle.com* website[16], includes the following:

> *"…it increasingly appears that there is one critical skill necessary for a successful project which is being overlooked: 'understanding'… Above all, understanding is the thoughtful application of common sense…Tolvik is regularly asked to assess the future balance between Residual Waste supply and EfW capacity. To date we have assumed that the checks and balances of rational investors, particularly where external project finance is required, will ensure that, unlike northern Europe, the risk of EfW over-capacity in the UK is very low. However, increasingly, project developers seem willing to ignore the need for 'understanding' if it is going to give them the wrong answer.*
>
> *" We see this with our market due diligence reports. As the market tightens, if our analysis is not favourable then we are increasingly being asked to change our assumptions. Most often this is a variant of 'can't you just increase the size of the modelled Catchment Area?' Having engaged experienced independent consultants, this appears to be a deliberate decision to redefine 'understanding'…But ignoring this need for 'understanding', when repeated across multiple projects, is starting to lead us to question whether the risk of EfW over-capacity is as low as we had previously assumed."*

100. Given that the EMERGE applicant has opted for a 2-hour isochrone, instead of the more usual 1-hour isochrone, it would be reasonable to conclude that the facility proposed for Ratcliffe-on-Soar would be incapable of sourcing sufficient feedstock within a 1-hour isochrone.

[16] See: https://www.letsrecycle.com/news/latest-news/understanding-risk-efw-overcapacity/

101. As demonstrated above, once the feedstock catchment area is extended to a 2-hour drive then whilst of course more feedstock becomes theoretically available, a much larger number of existing and emerging incinerators can be said to be competing for that same feedstock.

102. Returning to the national picture, in their ES Volume 1 Main Report, at Paragraph 1.2.8, the applicant states:

> *"The Proposed Development would make an important contribution to the acknowledged shortfall in waste recovery capacity within the United Kingdom (UK). This shortage is resulting in approximately 11 million tonnes per annum (2018) [Footnote 1: 'Approximate figure calculated from Tolvik Consulting – UK Energy from Waste Statistics – 2018 (June 2019).'] of residual waste, capable of being subject to energy recovery, being sent to landfill."*

103. This outdated claim is based on Tolvik's 2018 figures. The UK waste statistics for 2019 are now available, and these show higher levels of domestic incineration capacity than in 2018. The more recent Tolvik report[17] notes that:

> *"In 2019 the tonnage of Residual Waste processed at EfWs in the UK was up 9.9% when compared with the previous year to 12.6 Million tonnes."*

104. Importantly, the quantity of waste incinerated in a given year does not reflect the capacity which is available, in commissioning and under construction.

105. According to Tolvik, in December 2019 across the UK there were:

- 48 fully operational incineration facilities, with a headline capacity of 14.60 million tonnes per annum;
- 5 incinerators in late stage commissioning, with a headline capacity of 0.80 million tonnes per annum; and
- 12 incineration facilities in construction, with a headline capacity of 3.10 million tonnes per annum.

106. This adds up to 18.50 million tonnes of headline capacity in the UK based on existing facilities as of December 2019.

107. Furthermore, in addition to waste currently being exported and being landfilled potentially going to this 18.50 million tonnes of existing incineration capacity, as stated above much of the residual waste currently being sent for incineration or landfill could be recycled or composted.

108. The applicant has not demonstrated that there is any feedstock catchment area that can justify the proposed capacity and location of the EMERGE incinerator.

109. As such, the applicant has failed to demonstrate a need for the proposed incineration capacity.

[17] Available from: https://www.tolvik.com/wp-content/uploads/2020/05/Tolvik-UK-EfW-Statistics-2019-Report-June-2020.pdf

110. As set out above, the applicant has not ruled out the prospect that the EMERGE incinerator would be required to use as feedstock material that could and should be recycled or composted, and the applicant has not demonstrated that their proposal would be compatible with short-, medium- and long-term local and national recycling and waste minimisation targets.

Impacts of decarbonisation on residual waste arising and treatment capacity

111. As set out above, according to the applicant's Climate Change and Sustainability Assessment, the move to Net Zero by 2050 could result in significant reductions of both plastic and food waste in the residual waste stream.

112. According to the applicant's ES Volume 3 Appendix 8-4 analysis, as shown in Table 19: 'Impact on emissions of reducing food and plastic content of incoming waste', the calorific value of the feedstock could fall in the future due to ongoing decarbonisation of the residual waste stream.[18]

113. Such a drop in CV would increase the treatment capacity of all incinerators, not just the EMERGE incinerator. This would result in an increase in incineration capacity accompanied by a reduction in available feedstock for all waste incinerators.

114. The applicant fails to model this eventuality, despite raising the prospect of 'potential improvements associated with decarbonisation of the waste stream' that could bring about this sort of situation.

[18] This fall in CV can be determined by dividing the estimated CO_2 by the estimated carbon intensity, and this shows that the MWh would drop from 342,081 to 326,798 with the change in feedstock. Although not noted by the applicant in Table 19, this drop in CV would actually necessitate more waste to be imported in line with their analysis of Low NCV waste in Table 1 of Appendix 8-4: Carbon Assessment and Sustainability.

ADVERSE VISUAL AMENITY IMPACTS OF THE PROPOSAL

115. Whilst UKWIN will leave detailed evidence regarding the adverse visual amenity impacts, including adverse impacts on the Green belt, to other consultees, we would like to draw attention to a number of relevant planning decisions in this regard.

116. The planning application made by AmeyCespa (East) Limited for an incinerator to be built at land at Levitt's Field, Waterbeach Waste Management Park, Ely Road, Cambridgeshire (PINS Ref 3225123) was refused by the Secretary of State on the 15th of June 2020. According to the Decision Letter[19]:

> *"…the Secretary of State agrees with the Inspector…that the proposed development would have an adverse effect on the character and appearance of the area, and that this brings the proposal into conflict with SCLP Policies NH/2, HQ/1, and objective b. of SCLP Policy S/2. He further agrees that the proposal would also conflict with the Waste SPD and be at odds with the objective of SCDC's Landscape in New Developments SPD March 2010…"*

117. The planning application made by Veolia ES (Hertfordshire) Limited for an incinerator to be built at land at 2 Ratty's Lane, Hoddesdon, Hertfordshire (PINS Ref 3195373), was refused by the Secretary of State on the 19th of July 2019. According to the Decision Letter[20]:

> *"The Secretary of State considers that the significant adverse landscape and visual impacts, which as well as being in conflict with the development plan are also in conflict with emerging plan policies, policies of the Epping Forest Local Plan, policies of the Lee Valley Park Plan, and the Framework, carry considerable weight against the proposal…"*

118. The planning application made by Veolia Environmental Services Ltd for an incinerator to be built at land at New Barnfield, Hatfield (PINS Ref 2192045), refused by the Secretary of State on 7 July 2014. According to the Decision Letter:

> *"The Secretary of State considers that substantial weight should be given to the Green Belt harm by reason of inappropriateness. He considers that the harm to the openness of the Green Belt is real and he gives substantial weight to this harm. He also gives weight to the harm to the perception of a gap between Hatfield and Welham Green in line with the Green Belt aim to prevent neighbouring settlements merging into one another. The Secretary of State considers that there is further significant harm to the character and appearance of the area, and to the amenity of residents and users (particularly the enjoyment of the countryside, the footpath and cycle network, and the outlook from the most affected properties).*

[19] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/892192/Combined_DL_IR_R_to_C_Levitts_Field.pdf

[20] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819027/19-07-19_DL_IR_Addendum_Rattys_Lane_3195373.pdf

"He considers that there would be significant (though less than substantial) harm to the setting of the ensemble of heritage assets at Hatfield House and Park, and he attaches considerable weight and importance to this harm. Due primarily to the scale of the development, the Secretary of State considers that the mitigation proposals would not be fully effective in mitigating these impacts; that this harm would endure for at least the life of the scheme (c. 25 years); and that the existence of such a large building would be a material factor in considering the future potential of the site at that time…he agrees with the Inspector's conclusion that the very special circumstances necessary to justify the development do not exist…"

3rd party data

Sent: 18 August 2020 13:00
To: development management
Subject: ES/4154FW: EXTERNAL: FW: APPLICATION: 20/01826/CTY

3rd party data

Please can you enter this representation onto DEFsoft. # 3rd party data Daleacre Hill, North West Leicestershire District Council).

Thanks

3rd party data

Planning Applications Senior Practitioner
Nottinghamshire County Council

3rd party data

3rd party data

3rd party data

Sent: 18 August 2020 06:36
3rd party data

Subject: EXTERNAL: FW: APPLICATION: 20/01826/CTY

3rd party data

I can confirm I have received your consultation response and can confirm NCC will consider the issues raised when they determine the planning application. I note your concerns regarding traffic and odours.

In terms of the consultations sent out on this planning application, North West Leicestershire District Council were formally consulted on the planning application on the 27th July.

3rd party data

3rd party data

Planning Applications Senior Practitioner
Nottinghamshire County Council
3rd party data

3rd party data

Sent: 17 August 2020 16:29
3rd party data

Subject: RE: APPLICATION: 20/01826/CTY

Dear # 3rd party

I refer to your email below.

The Borough Council is a consultee to the application and the Nottinghamshire County Council are the determining authority.

As such, I have copied in # 3rd party of the County Council who should be able to assist with your enquiries

Kind regards

3rd party data

Principal Planning Officer
Rushcliffe Borough Council
3rd party data

3rd party data

Sent: 17 August 2020 14:45
3rd party data

Subject: APPLICATION: 20/01826/CTY

20/01826/CTY | Proposed development of the East Midlands Energy Re-Generation (EMERGE) Centre (a multifuel Energy Recovery Facility, recovering energy from waste material) and associated infrastructure | Ratcliffe On Soar Power Station Green Street Ratcliffe On Soar Nottinghamshire NG11 0EE

Good Afternoon # 3rd
I am writing to you # 3rd party data Daleacre Hill in North West Leicestershire, which borders onto the ward where the above application is proposed.

I note as part of the application that there is an estimate of 310 additional HGV movements on the A453 daily with additional staff, visitors vehicle movements too. This is an already extremely busy road. Residents in my area, in Kegworth, have fears that HGVs and vehicular traffic in general, will use the northern part of Kegworth - Sideley, Station Road towards Ratcliffe-on-Trent - as a convenient cut through at busy, congested times. There is a ban of HGVs through Kegworth, but unfortunately this doesn't stop this happening.

There is also concern among residents that there will smells omitted from the site, and many have cited the Sinfin Waste Recovery Centre in Sinfin, Derby. I understand this is a different type of site, but reassurance would be welcome to feed back to residents.

Could you also advise on mitigation proposed to keep traffic off village roads and on the A453.

Could I also request that I am a formal consultee in this application process due to the close proximity to my Ward?

Kind Regards

3rd party data
Daleacre Hill

District Council and our partners to deliver and improve services and fulfil our legal duties. We will not disclose any personal information to anyone else unless required or allowed to do so by law. Read more about how we use personal data in our Privacy Notice on our website: https://www.nwleics.gov.uk/pages/website_privacy'

Thank you for contacting Rushcliffe Borough Council.

Please give feedback on your correspondence with us today here:
https://www.surveymonkey.co.uk/r/9LC6CXL

Follow us on Twitter https://twitter.com/Rushcliffe

Like us on Facebook - https://www.facebook.com/rushcliffeborough

Connect with us on LinkedIn - www.linkedin.com/company/rushcliffe-borough-council/

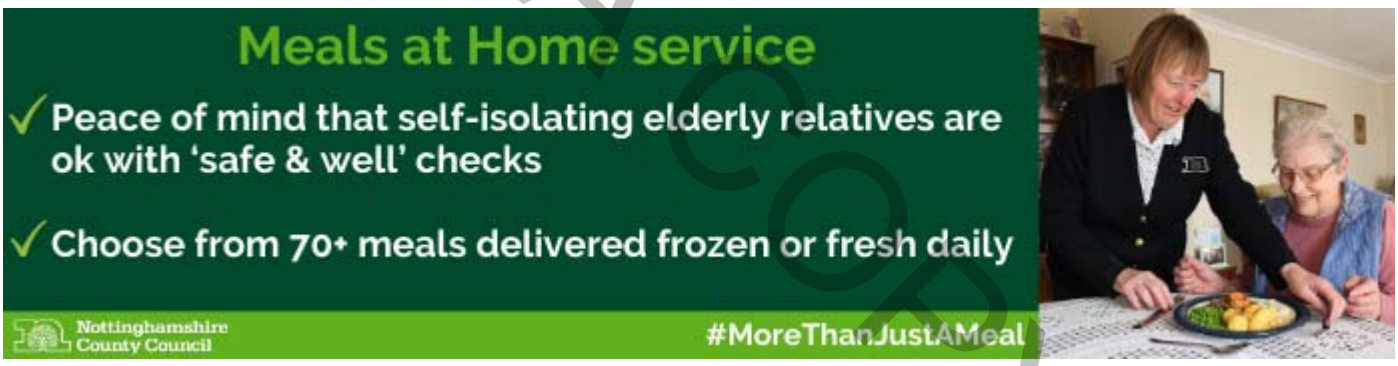
Sign up to receive our business newsletter - http://eepurl.com/dbczkn

Call us on 0115 981 9911 (8.30am to 5pm, Monday to Friday), email customerservices@rushcliffe.gov.uk or visit www.rushcliffe.gov.uk

ARBA
Assured Regulatory Business Advice

Rushcliffe Borough Council
Finalist, Local Authority of the Year 2019
ACHIEVEMENT AWARDS 2019
FINALISTS THE MJ

The following message has been applied automatically, to promote news and information from Nottinghamshire County Council about events and services:



Nottinghamshire County Council is committed to protecting your privacy and ensuring all personal information is kept confidential and safe – for more details see https://www.nottinghamshire.gov.uk/global-content/privacy

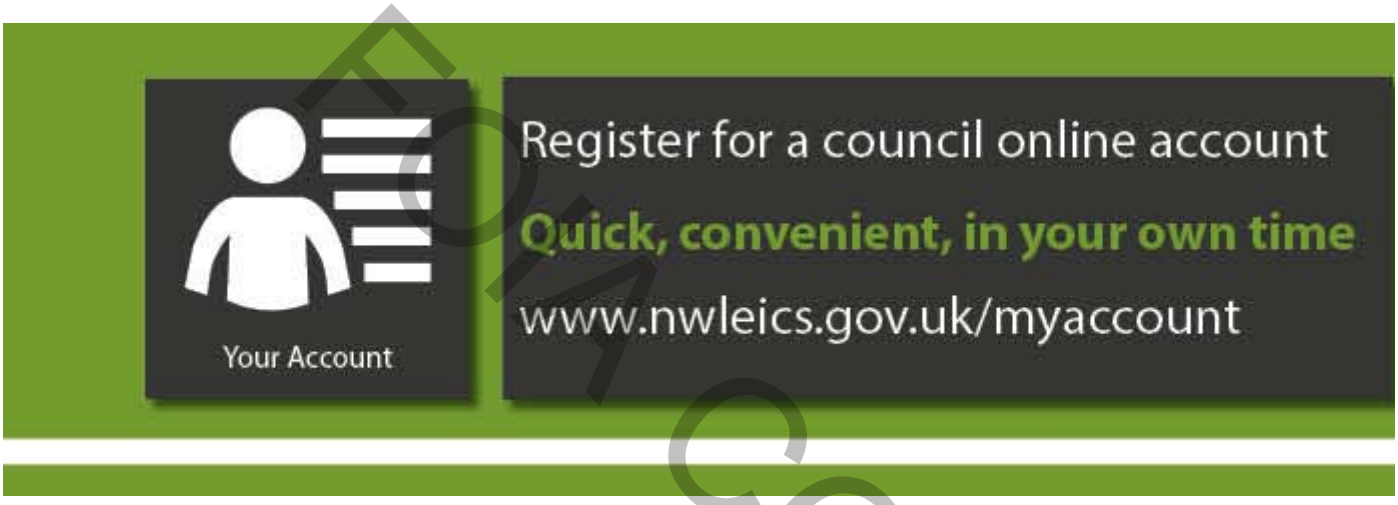
---

You can report, request and pay for things online at www.nwleics.gov.uk

------- Email confidentiality notice -------

This e-mail and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this e-mail in error please notify the originator of the message. This footer also confirms that this e-mail message has been scanned for the presence of computer viruses.

Please note: Incoming and outgoing e-mail messages are routinely monitored for compliance with North West Leicestershire District Council's policy on the use of electronic communications. Any personal data that you provide will be processed in accordance with current data protection laws. It will be used by North West Leicestershire District Council and our partners to deliver and improve services and fulfil our legal duties. We will not disclose any personal information to anyone else unless required or allowed to do so by law. Read more about how we use personal data in our Privacy Notice on our website: https://www.nwleics.gov.uk/pages/website_privacy'



Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party
Address	# 3rd party data
Type of Comment	No Objection
Comments	it good to see that plans are being made for this site prior to its closure. the loss of the industrial base locally should be slowed/stopped. this development will start this process.
Received	27/07/2020 14:55:53
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	The area from which waste is to be collected is undefined giving rise to uncertainty as to the reliability of supply. The chosen site lies on the border of Nottinghamshire, Leicestershire and Derbyshire and their is lack of clarity if those administrations will be involved. The power generated is tiny but the claim is that some 90,000 homes can be supplied. the current site has access to the national grid but the voltage is at 625Kv which seems beyond the capability of such a small power plant. Is it intended that the new facility will supply the local area? The site is rail connected. If successful will the size of the plant be expanded to take waste from furtehr afield?
Received	06/08/2020 12:41:54
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	Derby & South Derbyshire Friends of the earth object to the application for an incineration plant, on environmental and planning grounds, and submit extracts from our website which details the disbenefits and effects of particulates from plastic/biomass incineration, causing Deaths Brought Forward, in breach of human rights.https://derbyfoe.com/human-rights-shanks-renewi-macquarie-green-investment-group-et-al-plastics-biomass-incineration/ The process also ENDS cheaper reduction, reuse, repair and recycling. This was evidenced by a similar plan for Derby, the Derbyshire incineration plant, contract extracts here https://derbyfoe.com/pwc-deloitte-global-risk-plastics-biomass-waste-contracts-end-circular-economy/ Incinerators contribute to the destruction of nature-based solutions to the climate emergency - compost https://derbyfoe.com/eroding-the-earth-how-039waste-to-energy039-incineration-destroys-soil/ Its is a carbon-intensive process, needing to be fuelled by burning diesel too, Carbon disclosure of plastics/biomass incineration here https://derbyfoe.com/co2-from-plastics-biomass-incineration-wid-definition/ Often claimed to divert waste from landfill, the ash produced has to be dumped in landfill. The ash-quench process wastes up to 20 Olympic swimming pools daily, Severn Trent has acknowledged that water abstraction in the East Midlands, is already over the limit. Please refuse the application, which destroys global resources and worsens the climate emergency
Received	31/08/2020 19:12:40
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	I believe that the proposed development is important to the local area for a number of reasons 1. The plant will play an important part in the countries journey to achieve net zero for Carbon emissions by 2050 2. It will provide local, high value technical jobs for local residents when the exiting powerstation closes 3. Unlike housing, it will continue to support the local economy 4. Building the EMERGE center will support the sites further future redevelopment potentially based around sustainable energy. This in turn would provide a large number of highly paid skilled jobs. 5. The proposed development, with specified measures in place, would have a minimal impact on the local environment and would be significantly better for the environment than allowing the proposed waste that would be used to fuel the center put into landfill.
Received	06/09/2020 21:23:08
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	I believe that the proposed development is important to the local area for a number of reasons 1. The plant will play an important part in the countries journey to achieve net zero for Carbon emissions by 2050 2. It will provide local, high value technical jobs for local residents when the exiting powerstation closes 3. Unlike housing, it will continue to support the local economy 4. Building the EMERGE centre will support the sites further future redevelopment potentially based around sustainable energy. This in turn would provide a large number of highly paid skilled jobs. 5. The proposed development, with specified measures in place, would have a minimal impact on the local environment and would be significantly better for the environment than allowing the proposed waste that would be used to fuel the centre put into landfill. 6. As a Rushcliffe resident I think it is important that the area continues to provide high value jobs and plays an important part in the wider local economy. The development of the EMERGE centre will be pivotal in ensuring that the Ratcliffe Power Station site continues to play this role into the future.
Received	06/09/2020 21:35:33
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	The building of a huge incinerator would increase atmospheric pollution, contribute to global warming and discourage recycling and is a complete step backwards. This plant will also be incinerating rubbish from further afield and the transport of rubbish from other areas contribute to congestion on our roads.
Received	07/09/2020 09:09:05
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	Letter of objection attached
Received	07/09/2020 22:02:30
Attachments	The following files have been uploaded: Incinerator Objection letter # 3rd party NCC.pdf

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	A new facility to burn waste which also has the capacity to deal with waste imported into Nottinghamshire Would appear to contradict Nottinghamshire?s Core Waste Strategy
Received	08/09/2020 08:15:26
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	Whilst incineration does not provide carbon-free electricity, it does provide a means of dealing with waste that would otherwise end up in landfill. waste that burns gives off CO2, whereas waste left to decompose gives off methane - which is much worse than CO2 from a climate change perspective due to its heat retention properties in the atmosphere. With regard to the project, the EMERGE centre provides a means to redevelop the Ratcliffe Power Station site in a manner that provides high value jobs and plays an important part in the transition of the energy industry as the UK transitions towards a low carbon future.
Received	08/09/2020 10:55:42
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	I think its a positive use of the site and its good to see solutions to energy problems with the decommisioning of coal fired power stations
Received	08/09/2020 13:45:50
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	I wish it to be noted I support this application to re-purpose the Ratcliffe on Soar site in line with recovering energy from waste.
Received	09/09/2020 08:37:31
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party
Address	# 3rd party data
Type of Comment	Objection
Comments	I regularly use the footpaths from Kingston on Soar to part of the area owned by Uniper. I am concerned that the access I presently have to access and explore this area will be restricted by changes in use and development the company is proposing. After the recent restrictions in the pandemic I think we are all aware of the importance of nature and access to rural spaces. Please protect the ability of the public to continue to access the public footpaths.
Received	09/09/2020 10:07:18
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	This proposal is not even remotely in line with government or local targets to mitigate climate change. Notts County Council?s own aim, as part of its Waste Core Strategy (WCS), is to reduce the amount of waste going to incineration or landfill to 30% by 2030 (WCS3). We already have sufficient capacity to deal with all local waste destined for incineration with not only Eastcroft incinerator but also we have about 20 incinerators within a 2hr drive of the proposed site. With current recycling rates in Nottinghamshire currently at less than 50% this can only mean that if targets are met there will be a large reduction in waste going to incineration. This means that by the time this incinerator comes on line it will be searching far and wide to find enough waste to keep it up and running (contrary to WCS12). Do we really want Nottinghamshire to become the dumping ground for the entire country? Burning waste is considered to be slightly better than burning coal as far as carbon footprint is concerned but every other energy production method is much better ? even the burning of Natural Gas. Burning of plastics is basically fossil fuel burning with a few toxins added! (contrary to WCS14) The site is in green belt land and the proposed incinerator is therefore not in line with WCS4 which states that large waste management in green belt areas should only be permitted in very special circumstances. This is not a very special circumstance. An energy hub based on renewable energy would be a much better option. I hope this proposal is dismissed as, if an incinerator is built, it will be a backwards step in terms of tackling climate change.
Received	09/09/2020 14:38:24
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	I have thought about this in detail. I understand the need to reuse the grid connections at the site and I also understand the need to find a solution for our waste. But making the EastMidlands into the rubbish capital of the UK is not the answer. We need to stop creating rubbish.. providing a more convenient way to get rid of it will only encourage us to create more. This site will have 1000s of lorries coming to it each week I assume, with associated noise and pollution (unless there is a plan to use the river), it will inevitably spread some fumes down the whole Trent Valley.
Received	09/09/2020 23:39:32
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	I am in support of this application as it has numerous benefits for both the local community and the environment, including: - This site will create high skilled jobs in both the short and long term - The existing site is due to close, and this project will help retain existing jobs - Incineration of waste that cannot be recycled is a lower carbon solution than sending it to landfill - This project will help the UK to achieve its goal of net zero carbon. - This existing site is in a key central location which could be further utilized to create a wealth of low carbon industrial projects, which will ensure continued employment of people in the area, however, the incinerator project would be pivotal to attracting further develoment of the existing site post coal closure. Many Thanks, # 3rd party data -
Received	10/09/2020 10:27:49
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	I believe this application is good news for the Ratcliffe site and local economy in providing high quality jobs in an environmentally sustainable way. It may also act as a catalyst to the wider redevelopment of the Ratcliffe site towards high tech green jobs.
Received	10/09/2020 11:20:04
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	
Received	10/09/2020 11:24:10
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	I object at its air pollution and its visuals.
Received	10/09/2020 11:52:50
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party
Address	# 3rd party data
Type of Comment	Objection
Comments	The prevailing south west wind may bring toxins to Rushcliffe and the south Nottingham area. The issue is promotion of more recycling, less plastic and less consumption.
Received	10/09/2020 13:33:58
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party
Address	# 3rd party data
Type of Comment	Objection
Comments	I wish to OBJECT to this application for the following reasons: - This cannot be claimed as low carbon energy development. It is higher than alternatives in natural gas and ten times more than wind and solar - Anaerobic digestion for food waste provides lower CO2 emissions than incineration and this is not proposed as a use for this site - The proposal contains false assumptions relating to an increase in waste and the need for more capacity - It is not clear what processes are in place for the County Council to monitor breaches of emissions and air quality and what resources they have to enforce breaches. Without that reassurance, the application should be refused
Received	10/09/2020 14:24:23
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	I wish to object in the strongest possible terms to this application because 1. The existing Eastcroft Incinerator already deals with Nottingham and Rushcliffe?s waste. There are already existing Incinerators within a two hour radius that have spare capacity. There is no need for an additional Incinerator. The UK has an overcapacity of Incinerators. 2. The prevailing winds will blow potentially toxic fumes from the incinerator over the Nottingham and Rushcliffe region. 3. The incinerator proposal conflicts with local and national planning policies and objectives including the Nottingham and Nottinghamshire Waste Core Strategy 4. Incineration produces one tonne of CO2 for every tonne of waste burned which exacerbates our climate crisis. As a method of generating electricity it is 23 times worse than the green alternatives. 5. Analysis of so called ?Black Bin Waste?, which is used as feedstock for Incinerators, contains on average 50% potentially recyclable waste. Concentration must be on better recycling not burning. All those Local Authorities which have Incinerators have lower rates of recycling. This is in part due to the obligation they have to provide a certain annual tonnage of waste to the operators of the incinerator. 6. National and Global emphasis must be put on reducing waste at all stages and primarily at the production and marketing stages. An incinerator dependent on the burning of waste will be a disincentive to decision makers to act towards this aim.
Received	10/09/2020 17:58:50
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	We already have access to more incinerators than we need. Given the negatives associated with the project, it is hard to see how this proposal (over other potential alternatives) can possibly be beneficial to the county and its residents.
Received	10/09/2020 18:56:22
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party
Address	# 3rd party data
Type of Comment	Objection
Comments	I wish to register an objection to this application. I do not think it advisable to spend money on incinerating waste, however efficient the proposed project might be. In the current climate crisis the money would be better spent on increasing Nottinghamshire?s recycling facilities - thus reducing the need to incinerate. I also understand that the UK is unlikely to meet its agreed climate targets. To do this we should be reducing our reliance on incinerators.
Received	10/09/2020 20:05:33
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	I object to this planning application on the grounds that it is unnecessary and will be detrimental to the measures needed to reduce carbon emissions; evidence shows that areas that incinerate waste recycle less as there is not such a great incentive to do so. I am also concerned that this will be a long term commitment to produce enough waste to make the incinerator profitable when we should be reducing waste. Nottingham has two world-class universities, surely we can do better than this.
Received	10/09/2020 20:50:34
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party
Address	# 3rd party data
Type of Comment	No Objection
Comments	I believe the EMERGE Centre project will provide skilled jobs not only for the operation of the Centre, but in allowing the development of the power station site post demolition, for other companies to base them selves here, will bring further long term employment. The recycling of waste that would otherwise go to landfill, for power and heat must be an improvement to the environment.
Received	10/09/2020 21:01:31
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	This is not needed in Rushcliffe and we need to rethink the way we deal with waste. It?s also not in keeping with reaching net zero nor the county waste management strategy.
Received	10/09/2020 22:03:33
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party
Address	# 3rd party data
Type of Comment	Objection
Comments	This incinerator is not needed, Our communities need more time and information about this application. We should be recycling more not burning more plastic and this site could be used for far more sustainable activities. This incinerator will be pulling in plastic from many miles away and will reduce the amount of recycling that the borough of Rushcliffe currently undertakes because incineration directly impacts on recycling rates. I also object because insufficient evidence has been submitted about the health impacts that local residents will face and we need far more information. It is not needed.
Received	10/09/2020 22:14:58
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	Objection
Comments	I wish to object to this proposal for the Uniper EMERGE facility. # 3rd party data am writing in this capacity on behalf of myself, those I represent, and many others across the borough who have contacted me to express their concerns at this proposed development. Climate Change is an established fact and it is essential that firm and radical action is taken to halt and reverse it. This cannot be done by continuing to burn waste material, it is entirely the wrong approch to take. It is necessary that all material output from human activity be capable of being re-used, re-purposed, repaired and as a last resort recycled. Where such materials are not created with this in mind their production should end and alternatives used. The overwhelming need going forward is to reduce and eliminate waste, a need recognised by the government and most political parties. This proposal to build an incinerator that will require vast quantities of waste still to be generated to support its very existence flies in the face of all that needs to be done to prevent climate change. It requires waste to be produced, not designed out. It requires transport of that waste by HGVs (or possibly by rail) that will mean more burning of fossil fuels. The proposal will be a contradition in concrete form, a momument to failure. Please reject this application.
Received	10/09/2020 22:40:35
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	As a close neighbour , I am strongly in favour of the proposed development. The energy from waste plant will avoid significant amounts of waste going to land fill and will be a key part in the proposed further development of the site, helping to incubate other low carbon technologies (e.g. bio fuel and biogas) and promote growth in the local economy providing high quality jobs in areas of growth.
Received	11/09/2020 11:34:12
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	I strongly believe successful redevelopment of the site is vital for the local economy and supporting local jobs. The site is ideally positioned and easily accessible to support skilled workers from across the area. The ongoing landfill of waste causes great environmental harm and comes at a significant cost to local councils and businesses. Energy from waste centres if built and managed by responsible companies are an ideal solution to this problem.
Received	11/09/2020 17:40:41
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	The closure of the Ratcliffe coal plant, with likely demolition in following years, will mean that the chimney and cooling towers that once dominated the skyline in the area may be a thing of the past, and a milestone in moving away from fossil fuels. The plans to redevelop the site with job creating industry and research centres is an exciting prospect and I hope this becomes reality. The proposed energy from waste plant is pitched as an enabling item for subsequent developments. From the plans, the footprint of the plant is relatively small compared to the coal site and the chimney is shorter and significantly less obvious than the current cooling towers. On this point, I have no concerns as to the visible impact or scale of this plant, as this seems comparable to other visible industry in the area. It is possibly true that incinerators disincentive recycling - but I also cannot see society suddenly eliminating non recyclable waste in the near future, nor politicians putting in place aggressive measures to force this issue. Therefore it seems like a reasonable stop gap whilst we address the wider issue in coming decades. Additionally, I believe that combustion of this waste actually produces less carbon than putting it in landfill so I am not concerned from a carbon emissions point of view.
Received	11/09/2020 23:09:01
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party data
Address	# 3rd party data
Type of Comment	No Objection
Comments	Looking at the proposed master plan the proposed new development at the existing Ratcliffe power station site should be a massive boost to the local economy and should bring highly skilled highly paid new jobs to the area. The council has a moral obligation to support this new venture at the same time must ensure all the relevant local/national/international standards (especially environmental) will be followed & met at construction, implementation, operation & maintenance stages of the project. Wherever possible the council must encourage Uniper to engage with & use local suppliers & contractors and provide jobs for residents within the council area during the delivery of the project.
Received	13/09/2020 12:00:48
Attachments	

Comment for planning application ES/4154

Application number	ES/4154
Name	# 3rd party
Address	# 3rd party data
Type of Comment	No Objection
Comments	I think its a fantastic project that will create jobs and investment for the area and also giving opportunities for our children when they come of age. we must allow this project to go ahead to secure future jobs which are in short demand now.
Received	15/09/2020 09:45:19
Attachments	

Objection to planning application for East Midlands Energy Re-Generation (EMERGE) Centre (Uniper Ltd), County Council Planning Reference: ES/4154

In June 2019, the UK enacted a new emissions target. The target will require the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels. In the light of this, key strategies need to be recalibrated. Morevover, the last 20% of emissions will be the hardest to get out of the atmosphere. There is insufficient time before 2050 to allow investment in high emission intermediate technologies such as incineration; all effort should be put into net zero solutions.

A. Energy Supply

Your ref: Nottinghamshire and Nottingham Replacement Waste Local Plan: Waste core strategy: Policy WCS14. Managing climate change

A1 Energy from Waste is a high carbon option

The scoping letter sent by NCC's planning officer # 3rd party to Uniper on 6.4.20 included a section on Climate Change Energy Efficiency and Sustainability, in which # 3rd party made the point that this is a high carbon proposal. Ignoring this, Uniper's Centre Planning statement continues to peddle the myth that the proposed development has the "virtue of generating low-carbon energy" (Section 1.3.2, and throughout). Carbon emissions from incinerators are generally twice as high as their most common alternative, natural gas, and at least ten times as high as emissions from wind and solar installations https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf. It is incompatible with the Climate Change Act 2008 (2050 Target Amendment) Order 2019, which aims to reach net zero carbon emissions by 2050. People tend to forget that reaching net zero doesn't just mean emission reductions: it means **zero net** carbon emissions, such as might be achievable by adopting some of the technologies Uniper use elsewhere, such as wind to hydrogen https://cr.uniper.energy/?gclid=EAIaIQobChMIzMmHyu2z6wIVz9_tCh2F9ApHEAAYASACEgJLWPD_BwE

A2 Comparisons between energy from waste and landfill/fossil fuel emissions are based on a logical fallacy

Section 3.6.6. states that "the Proposed Development forms an important role in helping to achieve the required emission reductions by reducing greenhouse gas emissions from landfill and also from the generation of low carbon energy". In ES Appendix 8-4 of the planning application, Uniper set out analysis showing how the proposed development would deliver a carbon benefit over landfill estimated at 106,000 tonnes of CO2e per year (also p98 of Planning statement). This implies that the only choice available to society is that between energy from waste and landfill, which is a logical fallacy (a false dichotomy). This type of comparison goes back to the EU's Waste Framework Directive, i.e. this simplistic model was set up in an era where net zero carbon by 2050 was not a legally enforceable target https://www.ciwm.co.uk/ciwm/knowledge/the-r1-energy-efficiency-formula.aspx (2009).

The dichotomy is inappropriate because there are other sources of electricity, other waste treatments and other ways of valuing short cycle carbon (the carbon that was only relatively recently absorbed by living matter). These are detailed below.

Other sources of electricity.

The comparison of proposed development GHG emissions with fossil fuel emissions (Sections 3.1.10 and 3.1.11) is predicated on an assumption that only fossil fuels or energy from waste can provide

electricity flexibly. This is a false assumption. Natural gas is currently used as a flexible electricity source within a broad mix of supplies to the National Grid. Moreover the National Infrastructure Commission has proposed that the proportion of onshore wind, offshore wind and solar be increased from 50% to 65% by 2030 https://www.nic.org.uk/wp-content/uploads/Final-Renewables-Recovery-Reaching-Net-Zero.pdf. Development of hydrogen technology is strongly recommended by both the National Infrastructure Commission and the Committee on Climate Change to provide additional flexibility as well as very low carbon to the grid https://www.nic.org.uk/wp-content/uploads/Net-Zero-6-March-2020.pdf . In accordance with Net Zero planning objectives and contrary to Uniper's assertion, energy from waste is not needed to fill this role.

Emissions from waste treatments other than landfill.

There is not a simple choice for residual waste between landfill and incineration. Anaerobic digestion, for example, emits only 11g CO_2/kWh of electricity generated – over 45 times less than the current grid average https://adbioresources.org/about-ad/how-ad-benefits-everyone/ and "represents the best environmental outcome for food waste that cannot be prevented" according to the Government's 2018 Waste strategy (page 71). DEFRA's modelling approach uses the simple comparison of efW versus landfill adopted by Uniper, but DEFRA includes some nuance, "to identify potential measures indicated by the modelling to ensure the long term carbon benefits over landfill". http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=19019 (2013). So, for example, in Table 7 of the DEFRA document, it can be seen that the principal landfill gas emissions are from food, paper and card (75% of methane emissions) which could be diverted to anaerobic digestors to produce heat, power and fertiliser. Anaerobic digestors can also take a proportion of mixed waste. This is a crucial point, as Uniper's case for carbon emission superiority rests on the huge unburned methane emissions from landfill: these contribute disproportionately to the greenhouse effect because methane is about 25 times more potent than CO2 as a greenhouse gas.

Leaving short cycle carbon out of the calculation will not allow us to reach net zero

Most carbon footprint analyses draw a distinction between fossil fuel carbon (which was underground for millions of years and has only just re-entered the carbon cycle) and short cycle carbon (waste from plants and trees which absorbs CO2 from the air when growing and releases it when decaying). Up until adoption of the Net Zero target, short cycle carbon has tended to be excluded from calculations, as has been the case for Uniper's calculations in this application. However, as recognised by the CCC there is a growing need to increase the storage of carbon in the soil https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/, page 124. Anaerobic digestion, for example, creates compost which can be incorporated into the soil to sustain the billions of soil microorganisms that in turn feed growing plants without the need for mineral fertilisers. A full accounting of energy from waste compared to anaerobic digestion should therefore take into account the carbon footprint of mineral fertiliser in agriculture as described here https://www.sciencedirect.com/science/article/pii/S0959652619320402.

A3 Energy from waste is not renewable energy

In section 1.4.2 Uniper claim that they will supply energy to the local electricity grid, a significant proportion of which would be classed as renewable. The classification of incinerated waste as renewable (and therefore desirable) is based on an outdated definition of avoiding the burning of new material. This definition is superceded by the 2019 amendment to the Climate Change Act and by the 2020 CCC report referenced above which compels policy makers to sequester carbon where possible in addition to minimizing GHG emissions. Major objectives, p56, include "Limit emissions from combustion of non-bio waste"

B. Waste management

Your ref: Nottinghamshire and Nottingham Replacement Waste Local Plan: Waste core strategy: Policy WCS3. Future Waste Management Provision

In Uniper's planning application, section 3.2.2 , the concept of waste hierarchy described and the DEFRA document referred to are outdated. Neither takes into account the legal 2050 Net Zero target. For a more recent take, the Committtee on Climate Change 2020 Progress Report, page 22, states "Policy needs to accelerate the move to a circular economy….. Emissions from waste incineration will need to be addressed" Figure 1.3 Actions to achieve Net Zero states "Limit emissions from combustion of non-bio wastes". They also task the government (p34) with setting guidance to help align local authority waste contracts and planning policy to new targets. This guidance has not yet been forthcoming, so we are advocating that planners should rely heavily on the CCC's guidance that has been published in the past year, i.e. after the amendment of the Climate Change Act.

Anaerobic digestion
Anaerobic digestion of biogenic and mixed waste is up and running all over the country and is widely used by Local authorities, e.g. https://www.london.gov.uk/questions/2018/5273, https://www.local.gov.uk/anaerobic-digestion-reducing-landfill-waste. Anaerobic digestion is struggling to increase its capacity due to shortage of feedstock https://www.eunomia.co.uk/reports-tools/anaerobic-digestion-market-update/. Planning authorities need to prepare for separate food waste collections, which will become compulsory (promised by DEFRA in 2023) and to be able to justify how that food waste is utilised. When used well, as part of a circular economy, anaerobic digestion can also save carbon by replacing mineral fertiliser with its product. Intriguingly, the Government's Anaerobic Digestion Strategy states that although energy recovery is not generally thought of as superior to recycling in the waste management hierarchy, **"For certain organic waste, such as food waste, the use of AD to treat the waste is considered to be a better overall environmental outcome than recycling such waste"** (my emphasis).
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69400/anaerobic-digestion-strat-action-plan.pdf (paragraphs 22-23)

Waste Management Need
Establishment of need should take into account the thorough analysis produced by UKWIN in their objection to this Planning Application, which shows that current and planned capacity is considerably greater than suggested by Uniper.

The false assumption that waste will increase
The Government's waste strategy is dismissed in Uniper's planning application (Section 3.3.33) as being overambitious.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf . The Waste Strategy includes ambition to shift towards a more circular economy. Detail is lacking, which Uniper exploit, failing to mention that the Environment Bill currently passing through parliament contains details of how the strategy will be implemented. https://www.gov.uk/government/publications/environment-bill-2020/10-march-2020-waste-and-resource-efficiency-factsheet-part-3. Uniper, along with the County's current energy policy, refer to many documents that were published before the Climate Change Act was amended in 2019 and therefore fail to take into account the current legal position. Moreover, the Government's Waste Strategy does not exclude a **tax on incineration** if its waste ambition is not delivered (p79). The secretary of state echoed incineration tax as a fallback position in a Westminster debate in February of this year https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.
In conclusion there is every reason to assume that government policies will lead to a rapid decrease in waste over the next couple of decades. If a backup plan is needed, the overcapacity of current and planned incinerators elsewhere provide that backup.

Pressure on the waste supply chain
On this point, reporting to a Commons Select Committee in 2018, the Chief Scientific Advisor to DEFRA, Sir Ian Boyd stated,
"I think that incineration is not a good direction to go in. If you are investing many tens of millions, probably hundreds of millions, in urban waste incineration plants, and those plants are going to have a 30-year to 40-year lifespan, you have to have the waste streams to keep them supplied. That it is a market pull on waste. It encourages the production of waste. It encourages the production of residual waste. It encourages people to think that we can throw what could be valuable materials, if we were to think about them innovatively, into a furnace and burn them."
http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environment-food-and-rural-affairs-committee/work-of-the-chief-scientific-adviser-defra/oral/78127.html
Evidence supports Sir Ian's opinion. UKWIN have direct evidence that incineration of residual waste correlates with low recycling in the UK. Once an incinerator is in operation, it needs to be fed and therefore will bid competitively for waste.

Summarising this section, planners need clear delineation between biodegradable and fossil-fuel derived waste. Treatment of biodegradable waste (and a proportion of mixed waste) by anaerobic digestion, possibly linked to heat generation is becoming the method of choice for this waste stream. The Environment Bill on its way through Parliament will introduce compulsory separate food waste collection. Food waste should therefore not be considered as an available resource for incineration. The Committee on Climate Change is calling for a limit to the combustion of non-bio waste. Anaerobic digesion of biogenic and mixed waste with temporary landfill of unrecyclable plastics should be the principal methodologies for unavoidable residual waste management compatible with 2050 Net Zero goal. In the words of Sir Ian Boyd. Chief Scientific Advisor at Defra stated to the Commons Select Committee in 2018,
"Quite rightly, we have had a policy of trying to eliminate landfill in this country, because it has been seen as a major source of greenhouse gas pollution and, to some extent, groundwater pollution. That is because we put biodegradable organics in—food waste, garden waste and things like that. Landfill is a very low-marginal-cost method for storing highly resistant materials like plastics and metals for long periods of time, if we cannot extract the value from them now. …. We should not lose sight of the fact that, in a few decades' time, or maybe a bit longer, we might be mining our landfill sites for the resources they contain. Rather than putting some of those resources into incinerators and losing them for ever, we might want to think differently about the landfill sites."

C Heat and "upgrades"

Provision of heat
In Section 3.1.13 Uniper state that the Proposed Development would be CHP ready. There is no concrete proposal. Diverting steam for heat reduces electrical efficiency. Indeed. Using waste heat directly can be >90% energy efficient. Converting it to electricity, for onward use as heat and power delivers only around 30% efficiency.
The long-term heating of buildings in the vicinity would be locked in to a source of heat that could not be guaranteed.

Additional future upgrades
Uniper's timetable also suggests future upgrades towards low carbon options. They include an analysis, as requested, of how they might become net zero carbon by 2050 (App 8.4, s4.2). As with the heat proposal above, references to future upgrades are insubstantial. There is a discussion of how unrealistic carbon capture for use or storage is currently, with only vague suggestions that it might become possible eventually. We hope the planners will dismiss these insubstantial suggestions. You couldn't sell a half built house saying it was 'roof ready' or an unfinished car, marketed as 'brake ready'.

D Air Quality

The local government guide on air quality states: *"There is no safe level for particulate matter (PM10 and PM2.5), while NO2 is associated with adverse health effects at concentrations at and below the legal limits."*
https://www.local.gov.uk/sites/default/files/documents/6.3091_DEFRA_AirQualityGuide_9web_0.pdf
There is also the question of how breaches of regulations are dealt with. The quote below from Darren Jones MP at this year's Westminster Hall debate:
"Last year, I drew attention to a series of breaches by a company operating locally that had violated its permit more than a dozen times in the space of a year. It was eventually singled out by the Environment Agency, but a very high frequency of breaches had to occur before action could be taken. It should not take bad behaviour on that level to warrant enforcement action. Even when permits are revoked, the resulting appeals process is long, complicated and costly, imposing an obvious disincentive for the Environment Agency to deal with the individual breaches that collectively create such ***massive problems for local residents.***
https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.
Does the local authority have a duty to look at both the letter of the regulations and the procedures available if those procedures are breached? What breaches have there been in the past few years of breaches of pollution levels in Notts, and have the responses been swift and appropriate?

Conclusion

The planning application for EMERGE should be refused on the grounds that the facility's operation would be incompatible with the UK's net zero goals and the Council's own Waste Core Strategy, both for carbon emissions and for best practice in waste management.

[redacted] **on behalf of Nottingham and Nottinghamshire Extinction Rebellion Beyond Politics Group**

The recovery of energy from waste is perfectly sensible provided it can be done safely with minimal emissions. However, sadly this is not currently the case.

Waste incinerators generate at least twice as much CO^2 per Unit of energy generated than the current grid average with additional NOx and harmful particulates. They are most certainly NOT a green development. The public and media are being deliberately misled on this aspect of the development. Coal fired power stations are being forced to close for environmental purposes, this proposal is not in the spirit of that progress and contradicts the 2015 Paris climate change agreement.

https://zerowasteeurope.eu/2020/03/understanding-the-carbon-impacts-of-waste-to-energy/

Waste incinerators currently appear cost effective due to a legal loophole which is due to be challenged in court and will most likely be closed by the EU or UK courts soon.

https://www.theguardian.com/environment/2020/aug/25/legal-challenge-uk-exclusion-waste-incinerators-emissions-trading-scheme

This new development will also most likely be severely restricted by law or become economically unviable within the near future as climate change restrictions are increasingly tightened.

There are also many health risks associated with the emissions. There is nothing to reassure against a drop in air quality for surrounding residents or details of any emissions monitoring that will be carried out to protect residents in the surrounding areas. Studies have shown that a wide area can be affected, and that accurate dispersion modelling is required. There is no dispersion modelling included with the application.

https://www.hindawi.com/journals/jeph/2013/560342/

It is noted that the Nottinghamshire wildlife trust response is not included in the proposal documentation, yet they are noted as having supplied a response. This will have an adverse effect on the Attenborough wildlife reserve situated across the River.

Please see the following website for the harmful effects of incineration:

https://ukwin.org.uk/oppose-incineration/

Additionally, the site could be used for renewable energy providers generating an equivalent amount of power without any risks to surrounding area at a lower cost of energy supply. This could be integrated with eco houses, parks and wetlands building on the success of the Attenborough nature reserve which is one of the most visited parks in the country. This would generate a much healthier supply of jobs, tourism income and housing to the region. A waste incinerator of this size is likely to damage tourism and only strengthens the image of the midlands as a region of factories and planning blight. This development would be squandering the chance to greet visitors to Nottingham with something more pleasant than a stack of chimneys.

Please reject this development and hold out for a more environmentally friendly and visually appealing proposal.

Objection to planning application for East Midlands Energy Re-Generation (EMERGE) Centre (Uniper Ltd), County Council Planning Reference: ES/4154

In June 2019, the UK enacted a new emissions target. The target will require the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels. In the light of this, key strategies need to be recalibrated. Morevover, the last 20% of emissions will be the hardest to get out of the atmosphere. There is insufficient time before 2050 to allow investment in high emission intermediate technologies such as incineration; all effort should be put into net zero solutions.

A. Energy Supply

Your ref: Nottinghamshire and Nottingham Replacement Waste Local Plan: Waste core strategy: Policy WCS14. Managing climate change

A1 Energy from Waste is a high carbon option

The scoping letter sent by NCC's planning officer # 3rd party to Uniper on 6.4.20 included a section on Climate Change Energy Efficiency and Sustainability, in which # 3rd party made the point that this is a high carbon proposal. Ignoring this, Uniper's Centre Planning statement continues to peddle the myth that the proposed development has the "virtue of generating low-carbon energy" (Section 1.3.2, and throughout). Carbon emissions from incinerators are generally twice as high as their most common alternative, natural gas, and at least ten times as high as emissions from wind and solar installations https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf. It is incompatible with the Climate Change Act 2008 (2050 Target Amendment) Order 2019, which aims to reach net zero carbon emissions by 2050. People tend to forget that reaching net zero doesn't just mean emission reductions: it means **zero net** carbon emissions, such as might be achievable by adopting some of the technologies Uniper use elsewhere, such as wind to hydrogen https://cr.uniper.energy/?gclid=EAIaIQobChMIzMmHyu2z6wIVz9_tCh2F9ApHEAAYASACEgJLWPD_BwE

A2 Comparisons between energy from waste and landfill/fossil fuel emissions are based on a logical fallacy

Section 3.6.6. states that "the Proposed Development forms an important role in helping to achieve the required emission reductions by reducing greenhouse gas emissions from landfill and also from the generation of low carbon energy". In ES Appendix 8-4 of the planning application, Uniper set out analysis showing how the proposed development would deliver a carbon benefit over landfill estimated at 106,000 tonnes of CO2e per year (also p98 of Planning statement). This implies that the only choice available to society is that between energy from waste and landfill, which is a logical fallacy (a false dichotomy). This type of comparison goes back to the EU's Waste Framework Directive, i.e. this simplistic model was set up in an era where net zero carbon by 2050 was not a legally enforceable target https://www.ciwm.co.uk/ciwm/knowledge/the-r1-energy-efficiency-formula.aspx (2009).

The dichotomy is inappropriate because there are other sources of electricity, other waste treatments and other ways of valuing short cycle carbon (the carbon that was only relatively recently absorbed by living matter). These are detailed below.

Other sources of electricity.

The comparison of proposed development GHG emissions with fossil fuel emissions (Sections 3.1.10 and 3.1.11) is predicated on an assumption that only fossil fuels or energy from waste can provide

electricity flexibly. This is a false assumption. Natural gas is currently used as a flexible electricity source within a broad mix of supplies to the National Grid. Moreover the National Infrastructure Commission has proposed that the proportion of onshore wind, offshore wind and solar be increased from 50% to 65% by 2030 https://www.nic.org.uk/wp-content/uploads/Final-Renewables-Recovery-Reaching-Net-Zero.pdf. Development of hydrogen technology is strongly recommended by both the National Infrastructure Commission and the Committee on Climate Change to provide additional flexibility as well as very low carbon to the grid https://www.nic.org.uk/wp-content/uploads/Net-Zero-6-March-2020.pdf . In accordance with Net Zero planning objectives and contrary to Uniper's assertion, energy from waste is not needed to fill this role.

Emissions from waste treatments other than landfill.

There is not a simple choice for residual waste between landfill and incineration. Anaerobic digestion, for example, emits only 11g CO_2/kWh of electricity generated – over 45 times less than the current grid average https://adbioresources.org/about-ad/how-ad-benefits-everyone/ and "represents the best environmental outcome for food waste that cannot be prevented" according to the Government's 2018 Waste strategy (page 71). DEFRA's modelling approach uses the simple comparison of efW versus landfill adopted by Uniper, but DEFRA includes some nuance, "to identify potential measures indicated by the modelling to ensure the long term carbon benefits over landfill". http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=19019 (2013). So, for example, in Table 7 of the DEFRA document, it can be seen that the principal landfill gas emissions are from food, paper and card (75% of methane emissions) which could be diverted to anaerobic digestors to produce heat, power and fertiliser. Anaerobic digestors can also take a proportion of mixed waste. This is a crucial point, as Uniper's case for carbon emission superiority rests on the huge unburned methane emissions from landfill: these contribute disproportionately to the greenhouse effect because methane is about 25 times more potent than CO2 as a greenhouse gas.

Leaving short cycle carbon out of the calculation will not allow us to reach net zero

Most carbon footprint analyses draw a distinction between fossil fuel carbon (which was underground for millions of years and has only just re-entered the carbon cycle) and short cycle carbon (waste from plants and trees which absorbs CO2 from the air when growing and releases it when decaying). Up until adoption of the Net Zero target, short cycle carbon has tended to be excluded from calculations, as has been the case for Uniper's calculations in this application. However, as recognised by the CCC there is a growing need to increase the storage of carbon in the soil https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/, page 124. Anaerobic digestion, for example, creates compost which can be incorporated into the soil to sustain the billions of soil microorganisms that in turn feed growing plants without the need for mineral fertilisers. A full accounting of energy from waste compared to anaerobic digestion should therefore take into account the carbon footprint of mineral fertiliser in agriculture as described here https://www.sciencedirect.com/science/article/pii/S0959652619320402.

A3 Energy from waste is not renewable energy

In section 1.4.2 Uniper claim that they will supply energy to the local electricity grid, a significant proportion of which would be classed as renewable. The classification of incinerated waste as renewable (and therefore desirable) is based on an outdated definition of avoiding the burning of new material. This definition is superceded by the 2019 amendment to the Climate Change Act and by the 2020 CCC report referenced above which compels policy makers to sequester carbon where possible in addition to minimizing GHG emissions. Major objectives, p56, include "Limit emissions from combustion of non-bio waste"

B. Waste management

Your ref: Nottinghamshire and Nottingham Replacement Waste Local Plan: Waste core strategy: Policy WCS3. Future Waste Management Provision

In Uniper's planning application, section 3.2.2 , the concept of waste hierarchy described and the DEFRA document referred to are outdated. Neither takes into account the legal 2050 Net Zero target. For a more recent take, the Committtee on Climate Change 2020 Progress Report, page 22, states "Policy needs to accelerate the move to a circular economy….. Emissions from waste incineration will need to be addressed" Figure 1.3 Actions to achieve Net Zero states "Limit emissions from combustion of non-bio wastes". They also task the government (p34) with setting guidance to help align local authority waste contracts and planning policy to new targets. This guidance has not yet been forthcoming, so we are advocating that planners should rely heavily on the CCC's guidance that has been published in the past year, i.e. after the amendment of the Climate Change Act.

Anaerobic digestion
Anaerobic digestion of biogenic and mixed waste is up and running all over the country and is widely used by Local authorities, e.g. https://www.london.gov.uk/questions/2018/5273, https://www.local.gov.uk/anaerobic-digestion-reducing-landfill-waste. Anaerobic digestion is struggling to increase its capacity due to shortage of feedstock https://www.eunomia.co.uk/reports-tools/anaerobic-digestion-market-update/. Planning authorities need to prepare for separate food waste collections, which will become compulsory (promised by DEFRA in 2023) and to be able to justify how that food waste is utilised. When used well, as part of a circular economy, anaerobic digestion can also save carbon by replacing mineral fertiliser with its product. Intriguingly, the Government's Anaerobic Digestion Strategy states that although energy recovery is not generally thought of as superior to recycling in the waste management hierarchy, **"For certain organic waste, such as food waste, the use of AD to treat the waste is considered to be a better overall environmental outcome than recycling such waste"** (my emphasis).
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69400/anaerobic-digestion-strat-action-plan.pdf (paragraphs 22-23)

Waste Management Need
Establishment of need should take into account the thorough analysis produced by UKWIN in their objection to this Planning Application, which shows that current and planned capacity is considerably greater than suggested by Uniper.

The false assumption that waste will increase
The Government's waste strategy is dismissed in Uniper's planning application (Section 3.3.33) as being overambitious.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf . The Waste Strategy includes ambition to shift towards a more circular economy. Detail is lacking, which Uniper exploit, failing to mention that the Environment Bill currently passing through parliament contains details of how the strategy will be implemented. https://www.gov.uk/government/publications/environment-bill-2020/10-march-2020-waste-and-resource-efficiency-factsheet-part-3. Uniper, along with the County's current energy policy, refer to many documents that were published before the Climate Change Act was amended in 2019 and therefore fail to take into account the current legal position. Moreover, the Government's Waste Strategy does not exclude a **tax on incineration** if its waste ambition is not delivered (p79). The secretary of state echoed incineration tax as a fallback position in a Westminster debate in February of this year https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.
In conclusion there is every reason to assume that government policies will lead to a rapid decrease in waste over the next couple of decades. If a backup plan is needed, the overcapacity of current and planned incinerators elsewhere provide that backup.

Pressure on the waste supply chain
On this point, reporting to a Commons Select Committee in 2018, the Chief Scientific Advisor to DEFRA, Sir Ian Boyd stated,
"I think that incineration is not a good direction to go in. If you are investing many tens of millions, probably hundreds of millions, in urban waste incineration plants, and those plants are going to have a 30-year to 40-year lifespan, you have to have the waste streams to keep them supplied. That it is a market pull on waste. It encourages the production of waste. It encourages the production of residual waste. It encourages people to think that we can throw what could be valuable materials, if we were to think about them innovatively, into a furnace and burn them."
http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environment-food-and-rural-affairs-committee/work-of-the-chief-scientific-adviser-defra/oral/78127.html
Evidence supports Sir Ian's opinion. UKWIN have direct evidence that incineration of residual waste correlates with low recycling in the UK. Once an incinerator is in operation, it needs to be fed and therefore will bid competitively for waste.

Summarising this section, planners need clear delineation between biodegradable and fossil-fuel derived waste. Treatment of biodegradable waste (and a proportion of mixed waste) by anaerobic digestion, possibly linked to heat generation is becoming the method of choice for this waste stream. The Environment Bill on its way through Parliament will introduce compulsory separate food waste collection. Food waste should therefore not be considered as an available resource for incineration. The Committee on Climate Change is calling for a limit to the combustion of non-bio waste. Anaerobic digesion of biogenic and mixed waste with temporary landfill of unrecyclable plastics should be the principal methodologies for unavoidable residual waste management compatible with 2050 Net Zero goal. In the words of Sir Ian Boyd. Chief Scientific Advisor at Defra stated to the Commons Select Committee in 2018,
"Quite rightly, we have had a policy of trying to eliminate landfill in this country, because it has been seen as a major source of greenhouse gas pollution and, to some extent, groundwater pollution. That is because we put biodegradable organics in—food waste, garden waste and things like that. Landfill is a very low-marginal-cost method for storing highly resistant materials like plastics and metals for long periods of time, if we cannot extract the value from them now. …. We should not lose sight of the fact that, in a few decades' time, or maybe a bit longer, we might be mining our landfill sites for the resources they contain. Rather than putting some of those resources into incinerators and losing them for ever, we might want to think differently about the landfill sites."

C Heat and "upgrades"

Provision of heat
In Section 3.1.13 Uniper state that the Proposed Development would be CHP ready. There is no concrete proposal. Diverting steam for heat reduces electrical efficiency. Indeed. Using waste heat directly can be >90% energy efficient. Converting it to electricity, for onward use as heat and power delivers only around 30% efficiency.
The long-term heating of buildings in the vicinity would be locked in to a source of heat that could not be guaranteed.

Additional future upgrades
Uniper's timetable also suggests future upgrades towards low carbon options. They include an analysis, as requested, of how they might become net zero carbon by 2050 (App 8.4, s4.2). As with the heat proposal above, references to future upgrades are insubstantial. There is a discussion of how unrealistic carbon capture for use or storage is currently, with only vague suggestions that it might become possible eventually. We hope the planners will dismiss these insubstantial suggestions. You couldn't sell a half built house saying it was 'roof ready' or an unfinished car, marketed as 'brake ready'.

D Air Quality

The local government guide on air quality states: *"There is no safe level for particulate matter (PM10 and PM2.5), while NO2 is associated with adverse health effects at concentrations at and below the legal limits."*
https://www.local.gov.uk/sites/default/files/documents/6.3091_DEFRA_AirQualityGuide_9web_0.pdf
There is also the question of how breaches of regulations are dealt with. The quote below from Darren Jones MP at this year's Westminster Hall debate:
"Last year, I drew attention to a series of breaches by a company operating locally that had violated its permit more than a dozen times in the space of a year. It was eventually singled out by the Environment Agency, but a very high frequency of breaches had to occur before action could be taken. It should not take bad behaviour on that level to warrant enforcement action. Even when permits are revoked, the resulting appeals process is long, complicated and costly, imposing an obvious disincentive for the Environment Agency to deal with the individual breaches that collectively create such ***massive problems for local residents****.*
https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.
Does the local authority have a duty to look at both the letter of the regulations and the procedures available if those procedures are breached? What breaches have there been in the past few years of breaches of pollution levels in Notts, and have the responses been swift and appropriate?

Conclusion

The planning application for EMERGE should be refused on the grounds that the facility's operation would be incompatible with the UK's net zero goals and the Council's own Waste Core Strategy, both for carbon emissions and for best practice in waste management.

[redacted] **on behalf of Nottingham and Nottinghamshire Extinction Rebellion Beyond Politics Group**

3rd party data

[redacted]

4th August 2020

Your Ref: ES/4514

Attention # 3rd party data
Nottinghamshire County Council
Development Management
County Hall
West Bridgford
Nottinghamshire NG2 7QP

Dear Sirs

EMERGE Centre at Ratcliffe-on-Soar Power Station NG11 0EE

Thank you for your letter of 29th July in reference to the above.

As owner of the property at the above address which is about 1,000m to the west of the proposal site I am grateful to you for keeping me in touch with this matter which will potentially affect my immediate neighbourhood through traffic and environmental disturbance.

I have studied the proposal through documents available on your web site and take the view that they should not be passed by the council as they stand. There needs to be a restriction placed by the authorities on the number of vehicles and their routing when the plant becomes operational. Large goods vehicles need to be prohibited from accessing the Kegworth Road from the A453 interchange at Ratcliffe-on-Soar southwards which is of insufficient size to safely accommodate them in any numbers. Similarly the minor road from the proposed site access at the A453 interchange at Winking Hill southwards to New Kingston cross roads is already over used by large vehicles and will not stand further such traffic.

I am disappointed that the authority is being asked to consider plans for an "environment friendly" waste disposal and power generation scheme which makes no attempt to use the excellent rail freight infrastructure immediately adjacent. There must be a total prohibition under planning law of the use of road transport for importation of any material which is carried more than local distances to the site, and preferably for outgoing carriage too. A maximum carriage of 50 miles would seem excessive for road use in this instance. This limit

would allow direct delivery of locally collected waste but also provide for the possibility of rail delivery of waste from other large conurbations in the interests of plant profitability.

Assuming that these conditions are inserted into the planning agreements I do not expect to oppose the application.

I am grateful to you for keeping me advised of this matter and look forward to your further news of the progress of the present application. I shall also appreciate it if you will continue to advise me of planning matters affecting Ratcliffe-on-Soar and particularly Red Hill and access to my property although I hope not to waste your time dealing with minor objections.

Yours Faithfully

3rd party data

3rd party data

3rd party data

Sent: 10 September 2020 09:19
To: development management
Subject: Objection to Planning Application Display for: ES/4154

3rd party data

3rd party data
3rd

3rd party data
would like to formally object to the Proposed Development of the East Midlands Energy Re-Generation (EMERGE) Centre (a multifuel Energy Recovery Facility, recovering energy from waste material) and associated infrastructure.

(1) We support the objection submitted by UK Without Incineration Network.
1
[1]
In particular:

- Uniper has failed to demonstrate a need for extra incineration capacity. They have seriously overstated the quantity of residual waste and understated incineration capacity in the surrounding area.
- The proposed site is not near to urban areas where most waste is created. So it will promote unnecessary transport of waste into the Green Belt.
- It will generate large quantities of CO_2 (around 450,000 tonnes per year) with no realistic proposal to become carbon neutral (see calculation in (6) below).

(2) Waste Core Strategy Policy WCS3 requires proposals to accord with the aim to achieve 70% recycling or composting of all waste by 2025. Uniper's projections assume a failure to achieve this level of recycling. It is proposing a huge incinerator as an alternative to waste reduction and recycling. It therefore conflicts with Policy WCS3.
(3) Uniper's proposal does not adequately consider the implications of the EU Circular Economy Package or the Defra policy statement in support dated 30 July 2020.
1
[2]
It clearly fails to support the policy objectives of this package to minimise waste, promote resource efficiency and reuse waste as a resource. It also fails to adequately consider the implications of proposals in the Environment Bill (currently being considered by a Commons Committee), particularly the requirement for separate collection of food waste – which will greatly reduce the quantity of putrescible waste in residual waste requiring treatment.
(4) Policy WCS4 states that large-scale waste treatment facilities will be supported in, or close to, the built up areas of Nottingham and Mansfield/Ashfield. The site at Ratcliffe on Soar clearly conflicts with Policy WCS4.
(5) Policy WCS12 states that proposals which are likely to treat waste from outside Nottinghamshire and Nottingham will be permitted "where they demonstrate that: a) the envisaged facility makes a significant contribution to the movement of waste up the waste hierarchy, or b) there are no facilities or potential sites in more sustainable locations in relation to the anticipated source of the identified waste stream, or c) there are wider social, economic or environmental sustainability benefits that clearly support the proposal." UKWIN's analysis shows that Uniper have failed to identify much of the existing and planned incineration capacity within their "2-hour drive time catchment area". They have therefore failed to demonstrate compliance with Policy WCS12.
(6) Uniper plans to export 43.4MW electricity to the grid for 7,884 hours per year – a total of 393,412 MWh/y. If the waste input has a calorific value of 10MJ/kg they plan to burn 472,094t/y with an estimated carbon content of 26.18%. Assuming all this carbon is emitted as carbon dioxide, that will be 453,179t/y CO_2 – an average of 1.15kg CO_2/kWh. That is around four times the current carbon intensity of grid electricity. Even if only fossil carbon is

considered, they calculate 560g CO_2/kWh – over ten times the carbon intensity recommended by the Committee on Climate Change by 2030. (Slightly different figures would apply for a higher throughput of waste with a lower calorific value of 9MJ/kg.)

(7) Uniper estimates that the incinerator will work at an electrical efficiency of 26.1% (that is, just 26.1% of the energy in the waste will be exported as electricity) – worse than the efficiency of UK coal-fired power stations which is currently around 32%, though Uniper doesn't give a figure for the existing Ratcliffe on Soar power station.

(8) In order to further massage down the net carbon emissions, Uniper then deducts the amount of CO_2 which would be produced by a gas fired power station (rather than comparing with renewable electricity). And then deducts the greenhouse gas emissions from methane if putrescible waste was put in landfill. As UKWIN, argues, it would be more appropriate to bio-stabilise waste before putting it in landfill to reduce methane emissions. And proper account should be taken of the effect of taking food waste out of residual waste, as required by the Environment Bill, which will substantially reduce greenhouse gas emissions.

(9) Uniper does include a realistic discussion of how unrealistic it would be to apply "Carbon Capture and Use" to the incinerator. Given the complete lack of commitment to any realistic means of capturing CO_2, no weight should be given to this. In any case, they would intend to continue burning carbon-based material producing large quantities of CO_2 well beyond 2050 if given planning permission.

(10) Uniper also suggests that the incinerator could supply heat as well as electricity. Although vague possibilities are discussed, including supplying the surrounding site or housing planned for the area between Gotham and Barton in Fabis, there is no appraisal of costs or energy losses in distribution. Given the complete lack of commitment, no weight should be given to this. As a comparison is made with the combined heat and power provided by Eastcroft incinerator, it is worth looking at how inefficient that is. The last time we saw detailed figures was in a public inquiry in 2008 where figures were given for calendar year 2007.

1

[3]

Our calculation based on these figures showed that just 21% of energy in the waste was sold as heat through Enviroenergy. Only 10% was exported as electricity to the grid, and a further 2% was distributed through Enviroenergy's private grid. It demonstrates that providing some energy as heat requires a significant reduction in production of electricity.

1

[1]

Our calculations and background data are archived at https://nottfoe.gn.apc.org/oldfoe/200Eastcroft.html The City Council refused to tell us how much heat was actually sold by Enviroenergy until we paid £900 for five days work. (Would you believe that Enviroenergy doesn't know how much heat it sells in a year?) When the Information Commissioner ruled that they weren't allowed to charge for this, they refused to provide figures for subsequent years.

1

[1]

https://ukwin.org.uk/library/262-Objection-from-UKWIN-August-2020.pdf

1

[2]

https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement

1

[3]
Our calculations and background data are archived athttps://nottfoe.gn.apc.org/oldfoe/200Eastcroft.html The City Council refused to tell us how much heat was actually sold by Enviroenergy until we paid £900 for five days work. (Would you believe that Enviroenergy doesn't know how much heat it sells in a year?) When the Information Commissioner ruled that they weren't allowed to charge for this, they refused to provide figures for subsequent years.

3rd party data

3rd party data

3rd party data

For the attention of # 3rd party
Planning Department
County Hall
Loughborough Road
West Bridgford
Nottingham
NG2 7QP.

Dear # 3rd party

I wish to object in the strongest possible terms to the planning application for an Incinerator on the Ratcliffe-on-Soar power station site. My reasons are as follows:

1. The existing Eastcroft Incinerator already deals with Nottingham and Rushcliffe's waste. There are already existing Incinerators within a two hour radius that have spare capacity. There is no need for an additional Incinerator. The UK has an overcapacity of Incinerators!
2. The prevailing winds will blow potentially toxic fumes from the incinerator over the Nottingham and Rushcliffe region.
3. The incinerator proposal conflicts with various local and national planning policies and objectives including the Nottingham and Nottinghamshire Waste Core Strategy
4. Incineration produces one tonne of CO2 for every tonne of waste burned which exacerbates our climate crisis. As a method of generating electricity it is 23 times worse than the green alternatives.
5. Analysis of so called 'Black Bin Waste', which is used as feedstock for Incinerators, contains on average 50% potentially recyclable waste. Concentration must be on better recycling not burning. All those Local Authorities which have Incinerators have lower rates of recycling. This is in part due to the obligation they have to provide a certain annual tonnage of waste to the operators of the incinerator.

Yours sincerely

3rd party data

Dear Councillor,

East Midlands Energy Re-Generation (EMERGE) Centre (Uniper Ltd), County Council Planning Reference: ES/4154

Reputational Damage for East Midlands Development

The proposed East Midlands regional hub seeks to deliver a national focal point for low and zero carbon technology. With an incinerator, the people of the East Midlands are being offered a **high carbon** source of energy with vague suggestions of less carbon intensive future adaptations (details and references below). Inward investment can and should be created without an incinerator, which will serve as an embarrassment to any prospects of building a reputation as a green tech park. Anaerobic digestion, hydrogen fuel, battery storage and other truly ambitious technologies already in use and in development in our region could and should be encouraged as alternative energy supplies. This is all the more galling because, in continental Europe, Uniper is a practitioner of some of these innovative and low carbon technologies. Nottinghamshire and the East Midlands are being treated as unworthy of Uniper's best technology. Will you let them do this to us?

Understanding future waste demand

We all know that waste has got to go somewhere and that we cannot wish it away, but please be assured that there are sensible alternatives to incineration. Uniper seek to persuade you that increased incineration is a reasonable choice for our county and region. Here is why they are wrong:

The Government is planning a more circular economy

The Government's waste strategy (ref 1), with its emphasis on a more circular economy, is dismissed in Uniper's planning application (Section 3.3.33) as being overambitious. Detail is lacking in the Strategy, and Uniper exploit this, failing to mention that the Environment Bill currently passing through parliament contains details of how the strategy will be implemented (ref 2). Uniper, along with the County's current energy policy, refer to many documents that were published before the Climate Change Act was amended in 2019 and therefore lack sufficient ambition. Moreover, the Government's Waste Strategy suggests a **tax on incineration if its waste ambition is not delivered** (p79). The secretary of state

echoed this sanction in a Westminster debate in February of this year (ref 3). This shows that the government intends to put pressure on local authorities such as yourselves to ensure that increases in recycling and other waste reduction measures are implemented.

From the above, it is reasonably safe to assume that government policies will lead to a rapid decrease in waste over the next couple of decades. But, if you believe that a backup plan is needed, the overcapacity of current and planned incinerators elsewhere provide that backup. For details of the overcapacity please see the objection that UKWIN have submitted to the Planning Department. UKWIN give details of the existing and emerging incineration capacity to treat approximately 2.67 million tonnes of waste within the Uniper's 2-hour isochrone to the planning application. A report on incineration capacity nationally was produced by Eunomia in 2017 (ref 4).

Anaerobic digestion

Treatment of biodegradable waste (and a proportion of mixed waste) by anaerobic digestion, possibly linked to heat generation is becoming the method of choice for this waste stream. The Environment Bill on its way through Parliament will introduce compulsory separate food waste collection. Food waste should therefore not be considered as an available resource for incineration.

Anaerobic digesion of biogenic and mixed residual waste with temporary landfill of unrecyclable plastics should be the method of choice for residual waste management. In the words of Sir Ian Boyd. Chief Scientific Advisor at Defra stated to the Commons Select Committee in 2018,

"Quite rightly, we have had a policy of trying to eliminate landfill in this country, because it has been seen as a major source of greenhouse gas pollution and, t o some extent, groundwater pollution. That is because we put biodegradable organics in—food waste, garden waste and things like that. Landfill is a very low-marginal-cost method for storing highly resistant materials like plastics and metals for long periods of time, if we cannot extract the value from them now. …. We should not lose sight of the fact that, in a few decades' time, or maybe a bit longer, we might be mining our landfill sites for the resources they contain. Rather than putting some of those resources into incinerators and losing them for ever, we might want to think differently about the landfill sites."

Air Quality

Air quality is of great concern to us all. Incineration allows particulate matter to be released into the environment, which is very troubling for downwind residents. The local government guide on air quality states: *"There is no safe level for particulate matter (PM10 and PM2.5), while NO2 is associated with adverse health effects at concentrations at and below the legal limits."* (ref 5) There is also the question of how breaches of regulations are dealt with. The quote below from Darren Jones MP at this year's Westminster Hall debate:

"Last year, I drew attention to a series of breaches by a company operating locally that had violated its permit more than a dozen times in the space of a year. It was eventually singled out by the Environment Agency, but a very high frequency of breaches had to occur before action could be taken. It should not take bad behaviour on that level to warrant enforcement action. Even when permits are revoked, the resulting appeals process is long, complicated and costly, imposing an obvious disincentive for the Environment Agency to deal with the individual breaches that collectively create such ***massive problems for local residents****. (ref 6)*

Do you consider it to be your duty as a councillor to look at both the letter of the regulations and the procedures available if those procedures are breached? Do you know what breaches of pollution levels there have been in the past few years in Notts? Are you confident that the responses have been swift and appropriate, and will continue to be swift and appropriate, given constraints on the budget? Please ask yourself how you, as a councillor, can guarantee air quality in the County?

Energy from Waste is a high carbon option

Sorry, this next part is a bit technical, but it's also, to my mind, the most important issue. So thank you for reading this far. The scoping letter sent by Nottingham County Council's planning officer # 3rd party data to Uniper on 6th April this year included a section on Climate Change Energy Efficiency and Sustainability, in which # 3rd party data made the point that the proposed development is a high carbon proposal. Ignoring this, Uniper's Centre Planning statement continues to peddle the myth that the proposed development has the "virtue of generating low-carbon energy" (Section 1.3.2, and throughout). Carbon emissions from incinerators are generally twice as high as their most common alternative, natural gas, and at least ten times as high as emissions from wind and solar installations (ref 7). It is incompatible with the Climate Change Act 2008 (2050 Target Amendment) Order 2019, which aims to reach net zero carbon emissions by 2050. People tend to forget that reaching

net zero doesn't just mean emission reductions: it means **zero** net carbon emissions, such as is only achievable with truly progressive technologies. Uniper is working with these technologies elsewhere, and could do so in Nottinghamshire. Using wind to create green hydrogen is an example of Uniper's better practice elsewhere (ref 8).

Comparisons between energy from waste and landfill/fossil fuel emissions are based on a logical fallacy

Section 3.6.6 of the application states that "the Proposed Development forms an important role in helping to achieve the required emission reductions by reducing greenhouse gas emissions from landfill and also from the generation of low carbon energy". In ES Appendix 8-4 of the planning application, Uniper set out analysis showing how the proposed development would deliver a carbon benefit over landfill estimated at **106,000** tonnes of CO2e per year (also p98 of Planning statement). Their analysis implies that the only choice available to society is that between energy from waste and landfill. This is simply a logical fallacy (a false dichotomy). This type of comparison goes back to the EU's Waste Framework Directive, i.e. this simplistic model was set up in an era where net zero carbon by 2050 was not a legally enforceable target and burning waste seemed like a good idea (ref 9). The dichotomy is inappropriate because there are other sources of electricity, other waste treatments (especially those dealing with methane emissions) and other ways of valuing short cycle carbon, detailed below.

Other sources of electricity.

The comparison of proposed development GHG emissions with fossil fuel emissions in Uniper's proposal is based on an assumption that only fossil fuels or energy from waste can provide electricity flexibly. This is a false assumption. Natural gas is currently used as a flexible electricity source within a broad mix of supplies to the National Grid. Moreover the National Infrastructure Commission has proposed as recently as August 2020 that the proportion of onshore wind, offshore wind and solar be increased to 65% by 2030 (ref 10). Development of hydrogen technology is strongly recommended by both the National Infrastructure Commission and the Committee on Climate Change (ref 11) to provide additional flexibility as well as very low carbon to the grid. In accordance with Net Zero planning objectives and contrary to Uniper's assertion, energy from waste is not needed to fill this role.

Other waste treatments and methane release in landfill

DEFRA figures (ref 12, Table 7) show that that the principal landfill gas emissions are from food, paper and card (75% of methane emissions), which could be diverted to anaerobic digestors to produce heat, power and fertiliser. Anaerobic digestors can also take a proportion of mixed waste. This is a crucial point, as Uniper's case for the carbon emission superiority of the proposed development rests largely on the unburned methane emissions from landfill: these contribute hugely to the greenhouse effect because methane is about 25 times more potent than CO2 as a greenhouse gas.

Short Cycle Carbon

Most carbon footprint analyses draw a distinction between fossil fuel carbon (which was underground for millions of years and has only just re-entered the carbon cycle) and short cycle carbon (waste from plants and trees which absorbs CO2 from the air when growing and releases it when decaying or burning). Up until adoption of the Net Zero target, short cycle carbon has tended to be excluded from calculations, as has been the case for Uniper's calculations in this application. However, as recognised by the Committee on Climate Change, there is a growing need to increase the storage of carbon in the soil (ref 11, page 124). This can be achieved through anaerobic digestion to create compost which can be incorporated into the soil to sustain the billions of soil microorganisms that in turn feed growing plants without the need for the mineral fertilisers that are destroying our soil.

Additional future upgrades

Uniper inform us that their facility will be capable of providing heat to the surrounding area, and thus add to the cleverness and prestige of the proposed hub. But what exactly is on offer? There are serious flaws with this proposal which should be of importance to Councillors. Using waste heat directly can be >90% energy efficient. Converting it to electricity, for onward use as heat and power delivers only around 30% efficiency. If an incinerator is built to last 20-25 years but the houses built to use the heat are expected to last longer, what will happen then? Will the incinerator need to be kept on to keep the houses heated, or will residents be expected to convert to another source of heat at considerable cost? Would those receiving the heat be 'locked in' to paying for that heat, will they pay a fair market price

compared to other options? Could they end up in fuel poverty? And how would any of this be compatible with net zero targets?

Suggestions of additional future upgrades in Uniper's proposal comprise an analysis, as requested in the County Council Scoping letter, of how the proposed development might become a net zero carbon emitter by 2050. As with the heat proposal above, references to future upgrades have no substance (App 8.4, s4.2). It has been pointed out to me that you couldn't sell a half built house saying it was 'roof ready' or an unfinished car, marketed as 'brake ready'.

In summary, incineration can seem like the most economic pathway for waste disposal because the environmental cost of burning that waste or the environmental benefits of reduction, re-use, recycling and composting are yet to be fully reflected in policy and pricing. However, these are false economies that will necessarily be rectified within the early years of the lifespan of a new incinerator because of the Net Zero amendment to the Climate Change Act and additional legislation anticipated in the very near future, such as the current Environment Bill. Such false economies should not be relied upon to justify a Council committing to long-term incineration contracts that would then pose a barrier to recycling waste materials. From the point of view of the Council's reputation in helping to build a green energy hub, the Uniper proposal would provide high carbon energy and encourage waste production in a manner that ignores multiple innovative strategies for both energy and waste. It is a monstrous white elephant.

Yours sincerely

3rd party data

References

(1) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf .

(2) https://www.gov.uk/government/publications/environment-bill-2020/10-mar ch-2020-waste-and-resource-efficiency-factsheet-part-3.

(3) https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.

(4) https://www.eunomia.co.uk/reports-tools/residual-waste-infrastructure-review-12th-issue/.

(5) https://www.local.gov.uk/sites/default/files/documents/6.3091_DEFRA_AirQualityGuide_9web_0.pdf

(6) https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.

(7) https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf.

(8) https://cr.uniper.energy/?gclid=EAIaIQobChMIzMmHyu2z6wIVz9_tCh2F9ApHEAAYASACEgJLWPD_BwE

(9) https://www.ciwm.co.uk/ciwm/knowledge/the-r1-energy-efficiency-formula.aspx (2009).

(10) https://www.nic.org.uk/wp-content/uploads/Final-Renewables-Recovery-Reaching-Net-Zero.pdf.

(11) https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/

(12) http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=19019 (2013).

09 September 2020

To: # 3rd party data
Development Management
Nottinghamshire County Council
County Hall
West Bridgford NG2 7QP

development.management@nottscc.gov.uk

ES/4154 Objections:

• A real and rare chance lost, to get there's negative visibility altogether off the landscape backdrop.
Considering: the Green Belt ;
'south of Clifton' [cumulatively] 'development(s)' at or nr Kegworth.

• Insensitive design.

• Importing of waste from elsewhere
& concerns about incremental expansion in.
• And concerns about air quality.

'Would prefer the Borough, parishes and local residents to have the planning steer with regard to there.

3rd party data this development management department ought to read my 07.05.2020 response re waste local plan issues & options.

Sincerely

3rd party data .

Objection by Nottingham Friends of the Earth to proposal by Uniper for a 500,000tpa waste incinerator at Ratcliffe on Soar (ES-4154)

(1) Nottingham Friends of the Earth strongly objects to this proposal and asks Nottinghamshire County Council to refuse the planning application.

(2) We support the objection submitted by UK Without Incineration Network.[1] In particular:

- Uniper has failed to demonstrate a need for extra incineration capacity. They have seriously overstated the quantity of residual waste and understated incineration capacity in the surrounding area.
- The proposed site is not near to urban areas where most waste is created. So it will promote unnecessary transport of waste into the Green Belt.
- It will generate large quantities of CO_2 (around 450,000 tonnes per year) with no realistic proposal to become carbon neutral (see calculation in (8) below).

(3) Waste Core Strategy Policy WCS3 requires proposals to accord with the aim to achieve 70% recycling or composting of all waste by 2025. Uniper's projections assume a failure to achieve this level of recycling. It is proposing a huge incinerator as an alternative to waste reduction and recycling. It therefore conflicts with Policy WCS3.

(4) Uniper's proposal does not adequately consider the implications of the EU Circular Economy Package or the Defra policy statement in support dated 30 July 2020.[2] It clearly fails to support the policy objectives of this package to minimise waste, promote resource efficiency and reuse waste as a resource. It also fails to adequately consider the implications of proposals in the Environment Bill (currently being considered by a Commons Committee), particularly the requirement for separate collection of food waste – which will greatly reduce the quantity of putrescible waste in residual waste requiring treatment.

(5) Policy WCS4 states that large-scale waste treatment facilities will be supported in, or close to, the built up areas of Nottingham and Mansfield/Ashfield. The site at Ratcliffe on Soar clearly conflicts with Policy WCS4.

(6) Policy WCS12 states that proposals which are likely to treat waste from outside Nottinghamshire and Nottingham will be permitted "where they demonstrate that: a) the envisaged facility makes a significant contribution to the movement of waste up the waste hierarchy, or b) there are no facilities or potential sites in more sustainable locations in relation to the anticipated source of the identified waste stream, or c) there are wider social, economic or environmental sustainability benefits that clearly support the proposal." UKWIN's analysis shows that Uniper have failed to identify much of the existing and planned incineration capacity within their "2-hour drive time catchment area". They have therefore failed to demonstrate compliance with Policy WCS12.

(7) Moving towards a net zero carbon future will require progressive reduction in waste and increased recycling, in accordance with a Circular Economy strategy.

[1] https://ukwin.org.uk/library/262-Objection-from-UKWIN-August-2020.pdf

[2] https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement

This will mean that if the incinerator is approved it will have to source its waste from longer and longer distances.

(8) Uniper plans to export 43.4MW electricity to the grid for 7,884 hours per year – a total of 393,412 MWh/y. If the waste input has a calorific value of 10MJ/kg they plan to burn 472,094t/y with an estimated carbon content of 26.18%. Assuming all this carbon is emitted as carbon dioxide, that will be 453,179t/y CO_2 – an average of 1.15kg CO_2/kWh. That is around four times the current carbon intensity of grid electricity. Even if only fossil carbon is considered, they calculate 560g CO_2/kWh – over ten times the carbon intensity recommended by the Committee on Climate Change by 2030. (Slightly different figures would apply for a higher throughput of waste with a lower calorific value of 9MJ/kg.)

(9) Uniper estimates that the incinerator will work at an electrical efficiency of 26.1% (that is, just 26.1% of the energy in the waste will be exported as electricity) – worse than the efficiency of UK coal-fired power stations which is currently around 32%, though Uniper doesn't give a figure for the existing Ratcliffe on Soar power station.

(10) In order to further massage down the net carbon emissions, Uniper then deducts the amount of CO_2 which would be produced by a gas fired power station (rather than comparing with renewable electricity). And then deducts the greenhouse gas emissions from methane if putrescible waste was put in landfill. As UKWIN, argues, it would be more appropriate to bio-stabilise waste before putting it in landfill to reduce methane emissions. And proper account should be taken of the effect of taking food waste out of residual waste, as required by the Environment Bill, which will substantially reduce greenhouse gas emissions.

(11) Uniper does include a realistic discussion of how unrealistic it would be to apply "Carbon Capture and Use" to the incinerator. Given the complete lack of commitment to any realistic means of capturing CO_2, no weight should be given to this. In any case, they would intend to continue burning carbon-based material producing large quantities of CO_2 well beyond 2050 if given planning permission.

(12) Uniper also suggests that the incinerator could supply heat as well as electricity. Although vague possibilities are discussed, including supplying the surrounding site or housing planned for the area between Gotham and Barton in Fabis, there is no appraisal of costs or energy losses in distribution. Given the complete lack of commitment, no weight should be given to this. As a comparison is made with the combined heat and power provided by Eastcroft incinerator, it is worth looking at how inefficient that is. The last time we saw detailed figures was in a public inquiry in 2008 where figures were given for calendar year 2007.[3] Our calculation based on these figures showed that just 21% of energy in the waste was sold as heat through Enviroenergy. Only 10% was exported as electricity to the grid, and a further 2% was distributed through Enviroenergy's private grid. It demonstrates that providing some energy as heat requires a significant reduction in production of electricity.

(13) Uniper says that this development will cost around £330m and create 45 permanent jobs – that is £7.3m per job. That is very poor value for the local economy. Far more jobs would be created by investing this money in recycling

[3] Our calculations and background data are archived at https://nottfoe.gn.apc.org/oldfoe/200Eastcroft.html The City Council refused to tell us how much heat was actually sold by Enviroenergy until we paid £900 for five days work. (Would you believe that Enviroenergy doesn't know how much heat it sells in a year?) When the Information Commissioner ruled that they weren't allowed to charge for this, they refused to provide figures for subsequent years.

– which would also save more energy than is created by burning waste. Alternatively, investing that amount in energy efficiency for homes and businesses would save more energy than will be produced by incineration.

(14) Uniper falsely claims that its proposed incinerator will be “low carbon”. That is only true if most of the carbon dioxide coming out of the chimney is ignored. It also claims that it would provide greater security of supply than “intermittent” forms of renewable energy. However, it would create a different problem of intermittency – it would operate for only 7,884 hours out of a full year of 8,765 hours. And, of course, it would have the same problem created by nuclear power of generating power 24 hours per day including overnight when it isn’t needed – requiring significant energy storage capacity. It should also be noted that research for the Committee on Climate Change finds that intermittency of individual renewable forms of energy should not prevent full decarbonisation of power supply.[4]

9 September 2020

[4] https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-Technical-Annex-Integrating-variable-renewables.pdf

UNITED KINGDOM WITHOUT INCINERATION NETWORK

UKWIN
PLANNING OBJECTION

Proposed Development:
East Midlands Energy Re-Generation (EMERGE) Centre and associated infrastructure

Proposed Location:
Ratcliffe-on-Soar Power Station, Nottingham, Ratcliffe-on-Soar, NG11 0EE

Applicant:
Uniper UK Limited

Nottinghamshire County Council Planning Reference:
ES/4154

August 2020

INTRODUCTION

1. The United Kingdom Without Incineration Network (UKWIN) was founded in March 2007 to promote sustainable waste management.
2. The East Midlands Energy Re-Generation (EMERGE) incinerator proposal conflicts with various local and national planning policies and objectives.
3. This submission identifies some key conflicts with the Nottingham and Nottinghamshire Waste Core Strategy.
4. This submission focuses on three main areas of concern:
    - The adverse climate change impact of the proposed EMERGE incinerator;
    - The need, or otherwise, for the proposed EMERGE incinerator capacity (of between circa 472,100 and 524,550 tonnes per annum) and associated adverse impacts; and
    - The adverse impacts of the proposed EMERGE incinerator on visual amenity and the actual and perceived openness of the green belt.
5. **UKWIN objects to this proposal**, and calls upon Nottinghamshire County Council to **refuse** the planning application.

NOTTINGHAMSHIRE WASTE CORE STRATEGY (WCS)

WCS3: Future waste management provision

6. WCS Policy WCS3 states that:

> "*Future waste management proposals should accord with our aim to achieve 70% recycling or composting of all waste by 2025...Proposals will therefore be assessed as follows: ...b) new or extended energy recovery facilities will be permitted only where it can be shown that this would divert waste that would otherwise need to be disposed of and the heat and/or power generated can be used locally or fed into the national grid; ...*"

7. The applicant has not shown that their proposed EMERGE incinerator would divert waste that would otherwise need to be disposed of. As noted below, the facility might take waste from existing incinerators (e.g. Eastcroft and Sheffield), and emerging NSIPs (e.g. Boston and North Lincolnshire), and from recycling.

8. Diverting feedstock from existing (and emerging) incinerators does not meet the WCS3(b) policy requirement because it would not be diverting "*waste that would otherwise need to be disposed of."*

9. Burning substantial quantities of Lincolnshire's waste in Nottinghamshire instead of Lincolnshire does nothing to move waste management up the waste hierarchy.

10. The EMERGE incinerator application fails to demonstrate that their proposal would be compatible with the achievement of the WCS3 70% recycling target (or even the Government's 65% recycling target).

11. Furthermore, the applicant has not shown that sufficient feedstock would be made available to them from within Nottingham and Nottinghamshire for the duration of the planning permission to prevent reliance on importing significant quantities of waste from outside of the Plan area to be used as feedstock.

12. We also note that the connection to the power grid does not form part of the planning application and as such without planning controls it cannot be ensured that energy would *"be used locally or fed into the national grid".*

13. As such, for these reasons which are set out in more detail below, the proposal should be determined on the basis that it conflicts with Nottinghamshire and Waste Core Strategy Policy WCS3.

WCS12: Managing non-local waste

14. WCS Policy WCS12 states that:

> *"Waste management proposals which are likely to treat or dispose of waste from areas outside Nottinghamshire and Nottingham will be permitted where they demonstrate that: a) the envisaged facility makes a significant contribution to the movement of waste up the waste hierarchy, or b) there are no facilities or potential sites in more sustainable locations in relation to the anticipated source of the identified waste stream, or c) there are wider social, economic or environmental sustainability benefits that clearly support the proposal."*

15. Whilst it appears that the EMERGE incinerator is likely to treat waste from outside Nottingham and Nottinghamshire, the applicant has not demonstrated that the proposal meets any of the three criteria relating to the treatment of non-local waste.

16. In relation to (a), the facility appears more likely to divert waste from other incinerators and from recycling facilities than from landfill, and therefore and the applicant has not shown that their proposal would make a significant contribution to the movement of waste up the waste hierarchy.

17. In relation to (b), the applicant does not appear to have carried out any alternative site appraisal and nor have they shown that there are no facilities or potential sites in more sustainable locations in relation to the anticipated source of the identified waste stream.

18. In relation to (c), the applicant has not demonstrated that there are wider social, economic or environmental sustainability benefits that clearly support the proposal. As noted below, for example, the claimed climate change benefits assume waste would otherwise be sent untreated to landfill when this is not a realistic prospect, and even then the applicant acknowledges that the EMERGE incineration plant could perform worse than landfill in terms of GHG emissions.

19. For the size of the proposed development site, the number of jobs claimed is relatively low given the land take of the facility, and a far greater number of jobs accompanied by other social and economic benefits would be created through investment in recycling to meet the Waste Core Strategy's 70% recycling target - a target which could be undermined by this proposal.

20. We note the WCS Performance Indicator: *"New facilities located in accordance with criteria set"* and associated target of *"100% of permitted facilities meet WCS12 Criteria"*. This proposal does not accord with the criteria and would therefore go against the WCS target.

21. For reasons outlined above, and set out in more detail below, the proposal should be determined on the basis that it conflicts with Nottinghamshire and Waste Core Strategy Policy WCS12.

WCS4: Broad locations for waste treatment facilities

22. WCS Policy WCS4 states that:

> *"Large-scale waste treatment facilities will be supported in, or close to, the built up areas of Nottingham and Mansfield/Ashfield...In the Green Belt proposals for built waste management facilities would constitute inappropriate development and will be permitted only where need and other material considerations amount to very special circumstances sufficient to outweigh harm to the Green Belt and any other harm identified."*

23. The proposed EMERGE incinerator constitutes inappropriate development in the Green Belt and would be a large scale facility which is not in, or close to, the built up areas of Nottingham and Mansfield/Ashfield.

24. The applicant has not demonstrated that need and other material considerations amount to 'very special circumstances' sufficient to outweigh any harm to the Green Belt and any other harm identified.

25. We note the WCS target of "100% meeting broad location criteria".

26. This proposal should be determined on the basis that it conflicts with Nottinghamshire and Waste Core Strategy Policy WCS4 as this proposal fails to meet the broad locational criteria as set out in WCS Policy WCS4. The development would instead constitute unjustified inappropriate development in the Green Belt.

WCS14: Managing Climate Change

27. WCS policy WCS14 states:

> *"All new…waste management facilities should be located, designed and operated so as to minimise any potential impacts on…climate change."*

28. The performance indicator for policy WCS14 is that: *"Proposals judged to have unacceptable impact on climate change refused".*

29. As set out below, the EMERGE incinerator proposal would have an unacceptable impact on climate change and should therefore be refused in line with Policy WCS14.

ADVERSE CLIMATE CHANGE IMPACTS OF THE PROPOSAL

30. For the reasons set out below, UKWIN believes that the proposed EMERGE incinerator would have a net adverse climate change impact, as it would result in the release of more greenhouse gasses (GHGs) when compared with sending the same waste to landfill. More generally, the applicant's claims of climate change benefits do not stand up to scrutiny.

31. The applicant attempts to make much of the proposal's supposed climate credentials. For example, in their Pre-Application Request (Appendix 1-1) they boast of the proposed facility's ability to "*Provide low carbon and partially renewable energy, both power and heat, to the future industry and manufacturing uses planned for the site*" (emphasis added).

32. However, the proposal is modelled on an assumption of high carbon intensity, and is reliant on fossil fuels such as plastic for feedstock. The likelihood of exporting significant quantities of heat is 'uncertain' at best.

33. Furthermore, the applicant has not demonstrated that their proposed EMERGE incineration facility has been sized and located so as to minimise travel distances and the associated climate change impacts of road transport.

34. As can be seen from UKWIN's section on need (below), the proposed EMERGE incinerator could be reliant upon the importation from outside the County of significant quantities of non-local waste which would be transported over considerable distances, potentially passing one or more incinerators en route.

35. The applicant's assessment acknowledges how the incinerator could deliver a worse climate outcome than sending the same material, untreated, to landfill.

36. The applicant's Environmental Statement (ES), Volume 3, Appendix 8-4 (Carbon Assessment and Sustainability) includes Table 18: Sensitivity to assumptions regarding sequestration and DDOC, which shows that the proposal could result in a net disbenefit of being between 19,019 tonnes of CO_2 per annum worse than sending waste to landfill under a 'Low NCV' feedstock and 27,718 tonnes of CO_2 per annum worse than landfill under the 'Expected NCV' feedstock.

37. Whilst the applicant tries to argue that these scenarios are somehow 'pessimistic', there are actually grounds to conclude that the applicant's assumptions are overly optimistic, and that actual adverse impacts could be significantly more than 28,000 tonnes of CO_2 per annum worse than landfill.

38. For example, the applicant invites us to assume that the waste used as a comparator would be sent untreated directly to landfill without first being bio-stabilised. This is implausible as the treatment of this material is far more likely to be in line with the Government's move to Net Zero by 2050, meaning waste would be bio-stabilised prior to landfill.

39. Bio-stabilisation renders material virtually inert, meaning hardly any methane would be emitted, and the overwhelming majority of biogenic carbon would be sequestered (in line with Defra analysis[1]).

40. Furthermore, the applicant's use of CCGT as their comparator for the purpose of assessing the carbon intensity of the displaced energy unfairly favours incineration relative to using an assumption that is consistent with Government guidance to use the Marginal Emissions Factor (MEF).[2]

41. At Paragraph 4.8.2 of their Main Report (ES Volume 1) the applicant states:

> "*Decarbonisation of an energy recovery facility such as the Proposed Development can be achieved via either decarbonising the waste fuel or capturing CO2 from the flue gases arising from combustion, or through a combination of both. The Climate Change Committee (CCC) report supporting the Government's 2050 net zero target recommends specific policy options aimed at reducing both the plastic and biogenic content of waste, which is expected to deliver significant additional decarbonisation of the waste stream when implemented.*"

42. This raises a number of questions, including:

- If both the Government and the CCC are calling for reductions in both the plastic and biogenic content of waste, what combustible material will be left to be used as feedstock for the EMERGE incinerator?
- Where does the applicant's need analysis reflect a scenario whereby the proposed facility (and potentially other incinerators competing for the same reduced feedstock) avoids up to 100% of plastic and food waste (which currently makes up a significant proportion of the residual waste stream relied upon by all waste incinerators), e.g. with respect to the volume of paper and card that would be available to them from within the WCS Plan Area and within a 2-hour journey from the proposed facility?

43. With respect to the applicant's assumptions that there could be the removal of up to 100% of food waste and up to 100% of plastics from the incoming waste stream, it appears that the applicant is assuming that the EMERGE incinerator could be burning significant quantities of paper and card, i.e. material which could be recycled (or composted) and which in any case is unlikely to rot in landfill (and therefore unlikely to emit methane) even without bio-stabilisation.

---

[1] 'The Economics of Waste and Waste Policy Waste Economics Team Environment and Growth Economics, Defra, June 2011' states: *"MBT (mechanical biological treatment)-landfill provides the best emissions performance in terms of the treatment/disposal of residual waste. It essentially involves landfilling somewhat stabilised wastes with some material recovery. The magnitude of the environmental impact depends on the extent to which the waste is stabilised".* Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69500/pb13548-economic-principles-wr110613.pdf

[2] For details see: https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf and the various Government statements set out in that document. This report also sets out the need to account for biogenic carbon sequestration in landfill. Whist the applicant takes account of biogenic carbon sequestration, e.g. in ES Volume 3, Appendix 8-4, Table 18, they do not do so for their main analysis.

44. It appears that the applicant's need analysis fails to account for the potentially significant impact with respect to feedstock availability implied by their 'potential improvements associated with decarbonisation of the waste stream'.

45. It is also worth noting that in June 2020 the Climate Change Committee (CCC) called for an increase in separate waste collections and in new recycling, anaerobic digestion (AD) and composting facilities, noting that it is important not to "*lock in GHGs or increased risk*" (associated with waste incineration) setting out how increased reuse and increased recycling are needed "*to prevent lock-in of fossil emissions from waste incineration*".[3]

46. The CCC calls upon the Government to set a target for England of 70% recycling by 2030[4] and for Local Authority plans to be implemented to go beyond 70% recycling rates by the 2030's.[5]

47. It becomes clear that the CCC does not envisage the need for new waste incineration capacity that would extend its operations beyond 2030 as the way to address greenhouse gas (GHG) emissions.

48. Overcapacity of incineration jeopardises the achievement of the Government's decarbonisation ambitions, and therefore represents an increased risk to the achievement of Net Zero by 2050.

49. In addition to potentially diverting waste from MBT-Landfill and from recycling, there is also the potential that the proposed incinerator could divert residual waste from other incinerators.

50. This prospect is explored in more detail in the section on need (below), but it is relevant to note that the proposed EMERGE incinerator is about a 1 hour's drive from the Bernard Road incinerator in Sheffield and is less than half an hour by car from the Eastcroft incinerator in Nottingham.

51. Both of these operational incinerators are part of vast district heating schemes, meaning that if waste is diverted from these plants it could mean that the feedstock is treated at an electricity-only incinerator when it would otherwise be treated at a combined heat and power (CHP) plant. Such a situation would be highly undesirable from a climate change perspective.

52. The applicant's references to carbon capture technology are not accompanied by a commitment, e.g. a suggested planning condition or unilateral undertaking. They appear to be reliant upon the hope of external Government funding that has not been secured and is not on offer.

[3] Page 156 of *'Reducing UK emissions: Progress Report to Parliament'*, June 2020. Available from: https://www.theccc.org.uk/wp-content/uploads/2020/06/Reducing-UK-emissions-Progress-Report-to-Parliament-Committee-on-Cli.._-002-1.pdf
[4] *Ibid*., page 34
[5] *Ibid*., page 58

53. A recently-released report from Catapult indicates that the cost of retrofitting carbon capture technology to a 350,000 tonne per annum waste incinerator could cost around £100m to install and a further £4m per annum to operate, which would equate to around £220m over the 30-year lifetime of a typical incinerator.[6]

54. The Carbon Capture report also states that: *"...In the case of EfW, the capture plant does lose some ability to export power and therefore loses some revenue*". The applicant failed to model the reduced level of electricity export associated with such a retrofit.

55. In addition to the cost implications and the power export reduction, there are further risks and potential impacts associated with retrofitting carbon capture technology to EfW plants. For example, on pages 11 and 12 of their report Catapult identifies a series of 'Negative factors' for consideration, such as:

> "***Susceptibility to feedstock 'Impurities'****: The CCUS [carbon capture utilisation and storage] solvent is susceptible to degradation from many types of contaminant. It is not yet known if EfW flue gas when operated at full scale over long periods produces problems of this type. This technology risk is likely to have a negative impact on investment appetite, until operational experience is gained.*"

56. On page 24 of the applicant's Carbon Assessment (Appendix 8-4) we read:

- *"The carbon capture plant requires a significant amount of energy, in the form of steam, for the regeneration of the solvent and liberation of the product CO2. The final compression and treatment (for pipe transport or liquefaction) of captured CO2 also requires significant electrical power.*
- *"Finally, there will also be increases in cooling demand, water consumption and other utilities. There will also be additional consumption of other chemicals. The exact magnitude of these increases will depend on the capture process used and the extent of integration with the power island.*
- *"It should also be said that the application of post combustion capture is not widespread, and in particular not on waste fired plant, so there may some risks associated with excessive consumption of solvents used, due to trace constituents in the flue gas, and potentially also plant corrosion. These facets would require further investigation."; and*

[6] *'Energy from Waste Plants with Carbon Capture - A Preliminary Assessment of Their Potential Value to the Decarbonisation of the UK'*, Catapult Energy Systems, May 2020. Available from: https://es.catapult.org.uk/reports/energy-from-waste-plants-with-carbon-capture/

- *"The capital cost of a capture plant would add significantly to that of the overall development. For context, the ROAD project, one of Europe's furthest developed CO2 capture projects and which was developed by Uniper in joint venture, would have cost between €185 million and €230 million in 2017 (plus Owner's costs), for a plant sized to capture 169 tphCO_2 (with perhaps an additional 25–55 % of other integration costs). A smaller scale system, of the size required for the Proposed Development, might be relatively more costly due to economies of scale. However, at this scale the potential is opened up to make greater use of modularisation in design and build, and perhaps of common plant item designs.*
- *"Operating costs are also significant for CCS plant. When taking into account the maintenance, staffing, chemicals and energy costs (the latter being the greatest), based again on the ROAD project, the operating costs might be in the region of €25/teCO2. These costs are discussed further in the ROAD close-out report [18]. Further additional costs might be incurred for use of a CO_2 transport system and storage, if not sold to the industrial sector."*

57. The conclusions to be drawn from the applicant's statements regarding the prospect of 'decarbonising' their proposed incinerator is that the opportunities they cite rely upon factors outside of their control; that these 'opportunities' are accompanied by adverse impacts and other implications that have not been fully assessed by the applicant; and that the process could require substantial financial investment that to date no party has offered to provide.

58. This means that the applicant's fanciful decarbonisation claims should be afforded little or no weight in the planning balance. This also means that serious concerns about the proposal's compatibility with Net Zero 2050 should weigh heavily against the proposal, especially as they are seeking permanent planning permission for a development which could operate well beyond 2050.

59. One possibility is that the applicant could transform their application into one for temporary planning permission until 2040, with the option of applying for an extension to this consent were they able to find a workable and viable means by which to be consistent with the Government's commitments to meet the legally binding Net Zero 2050 target, abide by the Paris Climate Agreement, and decarbonise the electricity supply.

60. The aforementioned Catapult report explains how: "*In terms of sustainability, unabated EfW power plants produce power of carbon intensity around 600g/kWh (excluding biogenic carbon). This is about 50% higher than a typical CCGT, and already higher than the current grid average intensity which is around 220 g/kWh. Assuming that the decarbonisation of the power sector continues as expected, by 2030 the carbon intensity of unabated EfW will be significantly higher than grid average, further weakening their attractiveness*".

61. At 4.2.1 of the applicant's ES Volume 3, Appendix 8-4 (Carbon Assessment and Sustainability) the applicant concedes that their facility would be a high-carbon development when compared with CCGT, offering carbon intensity figures for the EMERGE incinerator of "*around 560 gCO_2/kWh*" which they acknowledge is "*higher than CCGTs (349 gCO_2/kWh)*".

62. As shown in Table 19 of the applicant's ES Volume 3, Appendix 8-4, even if all of the food and plastic were to be removed from the EMERGE incinerator's feedstock, the carbon intensity of the energy generated by the incinerator (379 gCO_2/kWh excluding biogenic CO_2) would still be higher than CCGT.

THE NEED OR OTHERWISE FOR THE PROPOSED CAPACITY

63. The EMERGE planning application overestimates levels of future residual waste arisings and underestimates residual waste treatment capacity. It fails to adequately explore the locational, waste hierarchy and feedstock implications of the likely future waste context.

Residual waste arisings

64. At pages 16 and 17 of the Planning Statement the applicant claims that:

> *"The 70 % recycling target, whilst admirable, is proving elusive…there would need to be significant financial investment (at a time when local authorities are under severe economic pressure) and radical policy intervention to materially increase recycling levels."*

65. Firstly, we note that in October 2013 the Local Plan Inspector Susan Holland found that:

> *"The overall target of adopted by the WCS* [Waste Core Strategy] *for the recycling or composting of 70% of municipal, commercial & industrial, and construction & demolition waste by 2025 is balanced and realistic."*

66. Secondly, we note that the Government is bringing forward what the applicant refers to as "*significant financial investment…and radical policy intervention to materially increase recycling levels".*

67. The most recent document to reaffirm this Government commitment is the draft replacement Waste Management Plan for England (WMPE), released for consultation on 20th August 2020.[7]

68. The main replacement WMPE document states:

> *"In February 2019 the Government published a consultation on measures to increase recycling from households and businesses to support the achievement of a much higher 65% recycling rate for municipal waste by 2035. Consultation on these proposals closed on 13 May 2019 and Government published a summary of its response to the consultation on 23 July 2019. This states that, the Government will introduce measures for England to increase household recycling by requiring all local authorities to collect a consistent set of dry materials from households in England; to collect food waste separately from all households on a weekly basis; and to arrange for garden waste collection where necessary. These measures are expected to increase recycling from households from current levels to 65% by 2035. This will support our ability to meet commitments on recycling outlined in the Resources and Waste Strategy."* (emphasis added)

[7] https://consult.defra.gov.uk/waste-and-recycling/waste-management-plan-for-england/supporting_documents/Waste%20Management%20Plan%20for%20England.pdf

69. According to Defra's associated Environmental Report[8] the draft 2019 WMPE contains *"explicit commitments, drawn from other document such as the RWS* [Resource and Waste Strategy]*"* and lists these, including:

    - "We will continue to work with local authorities [Environment Report's underlining] to increase household recycling in the short-term to achieve 50% by 2020." (page 12)
    - "The Government will introduce measures for England to increase household recycling by requiring all local authorities to collect a consistent set of dry materials from households in England; to collect food waste separately from all households on a weekly basis; and to arrange for garden waste collection where necessary. These measures, together with reforms to municipal business recycling are expected to increase municipal recycling from current levels to 65% by 2035." (page 21)
    - "We have committed to funding the net costs of new burdens on local authorities arising from new statutory duties introduced to increase consistency in recycling and we will work with local government bodies to develop our assessment of costs and changes necessary." (page 39)

70. As such, the Government intends to bring in new measures to boost recycling, and they have committed to funding these measures (both directly and through schemes such as extended producer responsibility), and the Government expects these measures will result in 65% recycling for municipal waste in England by 2035.

71. Some of these measures have already been published in draft form, e.g. in the Environment Bill.

72. As noted above, in June 2020 the CCC recommended that the Government adopt a more ambitious target of 70% recycling by 2030.

73. The same CCC report also notes, on page 183, that:

> "*Achieving significant emission reductions in the waste sector requires a step-change towards a circular economy, moving away from landfill and incineration (and the associated methane and fossil CO_2 emissions), and towards a reduction in waste arisings and collection of separated valuable resources for re-use and recycling. This applies at local, regional and national levels*." (emphasis added)

74. In the House of Commons on 28th March 2019 John Grogan MP questioned Michael Gove, saying:

> *"Most studies now indicate that we have an excess of incineration capacity to deal with residual waste. Is there not a danger that, if we build more incinerators, waste that would otherwise be recycled will be diverted to those incinerators?"* and the then Environment Secretary acknowledged this by responding: *"That is a fair point".*

[8] https://consult.defra.gov.uk/waste-and-recycling/waste-management-plan-for-england/supporting_documents/Environmental%20Report.pdf

75. On 12th September 2018 the UK Government's Resource Minister Thérèse Coffey gave oral evidence to the Environmental Audit Committee where she stated:

    - *"…the [European] Commission itself is very concerned about the explosion, if you like, of incineration around the European Union. It does not want to massively encourage it in the future. Some countries incinerate almost all of their waste, or they are reaching that very high level. I am not convinced that in respecting the waste hierarchy, we want to massively increase the amount of incineration that we are doing..."*
    - *"I think, actually, there is sufficient capacity out there for incineration. Often what happens with policies is that they come out with unintended consequences. The general view I get from the [European] Commission in the report they did is that we now have too much incineration across the European Union, and we need to do more to refocus on recycling…"*

76. On 28th January 2020 Rebecca Pow, speaking on behalf of the Government as the Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs, told a Westminster Hall debate:

    "…we seek to minimise the amount of waste that goes to incineration or landfill" [9]

77. On 12th February 2020 Rebecca Pow, speaking on behalf of the Government as the Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs, told a Westminster Hall debate:

    "…the measures in the resources and waste strategy and the Environment Bill will enable a paradigm shift, in relation to reducing, reusing and recycling our waste, that should limit the amount that ever has to go to incineration and landfill. I hope that, from what I have said, hon. Members understand what is happening, the direction that the Government are absolutely committed to, and the move to a circular economy." (emphasis added)

78. As such, not only has the Government confirmed their commitment to, and expectation of achieving, a 65% recycling target, but they acknowledge that it is fair to say that incineration overcapacity has the potential to harm recycling.

79. Indeed, in recognition of the ability of incineration to come at the expense of recycling, the Government has warned that if their proposed measures are unsuccessful then they will consider introducing an incineration tax to divert waste from incineration to recycling.

[9] Hansard - Westminster Hall debate on Industrial and Commercial Waste Incineration (UK Parliament, 28 January 2020). Available from: https://hansard.parliament.uk/Commons/2020-01-28/debates/9209AD6A-6C6B-47CB-A460-5147EC43131F/IndustrialAndCommercialWasteIncineration

80. To quote the Government's October 2018 budget: *"…the government wants to maximise the amount of waste sent to recycling instead of incineration and landfill. Should wider policies not deliver the government's waste ambitions in the future, it will consider the introduction of a tax on the incineration of waste…"* [10] (emphasis added)

81. This position has subsequently been restated and reaffirmed by various Government ministers.

82. The link between recycling underperformance and an intervention relating to discouraging incineration is not surprising, as a significant proportion of the current residual waste stream used as incinerator feedstock is recyclable, and much of the non-recyclable elements in the residual waste stream are substitutable.

83. According to Defra's August 2020 report entitled *'Resources and waste strategy for England: monitoring and evaluation'*:[11]

- *"The large amount of avoidable residual waste and avoidable residual plastic waste generated by household sources each year suggests there remains substantial opportunity for increased recycling."*
- *"The message from this assessment is that a substantial quantity of material appears to be going into the residual waste stream, where it could have at least been recycled or dealt with higher up the waste hierarchy."*
- *"Of total residual waste from household sources in England in 2017, an estimated 53% could be categorised as readily recyclable, 27% as potentially recyclable, 12% as potentially substitutable and 8% as difficult to either recycle or substitute."*
- *"Of approximately 13.1 million tonnes of residual waste generated by household sources in England in 2017, around 7 million tonnes could be categorised as readily recyclable, 3.5 million tonnes as potentially recyclable, 1.6 million tonnes as potentially substitutable, and 1.0 million tonnes as difficult to recycle or substitute. All figures are estimates."*

84. A Welsh WRAP study similarly found that up to nearly 77% of residual Commercial & Industrial (C&I) waste in Wales in 2019 could have been recycled, stating:

> "*The majority of the [residual C&I] waste analysed (74.5% (+/- 2.4%) or 450,478 tonnes annually) could have potentially been recycled*".[12]

[10] Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752202/Budget_2018_red_web.pdf

[11] Available from: https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england-monitoring-and-evaluation

[12] Available from: http://www.wrapcymru.org.uk/reports/composition-analysis-commercial-and-industrial-waste-wales

Residual waste treatment capacity

85. The applicant has adopted a 2-hour isochrone for their feedstock availability assessment.

86. It should be noted that, generally speaking, 1 tonne of Refuse Derived Fuel (RDF) requires the dewatering of approximately 1.33 tonnes of 'raw' waste.

87. At Paragraph 2.4.31 of the Main Report of the applicant's Environmental Statement (Volume 1) we read how the applicant undertook a search "*on the Planning Inspectorate website to identify…any Nationally Significant Infrastructure Projects (NSIPs)*".

88. The applicant's NSIPs search failed to identify the proposal for the Boston Alternative Energy Facility (BAEF). It should be noted that the proposed BAEF would be located circa 1 hour and 40 minutes away from the proposed EMERGE incinerator, and that the Boston facility would be capable of processing 1 million tonnes of RDF[13] (which would require the dewatering of approximately 1,330,000 tonnes of 'raw' waste) to generate 102MW of energy (gross).

89. The applicant's NSIPs search also failed to identify the proposal for the North Lincolnshire Green Energy Park. It should be noted that the proposed North Lincolnshire Green Energy Park would be located circa 1 hour and 30 minutes away from the proposed EMERGE incinerator, and that the North Lincolnshire facility would be capable of processing 650,000 tonnes of RDF[14] (which would require the dewatering of approximately 865,000 tonnes of 'raw' waste) to generate 95MW of energy (gross).

90. Additionally, the applicant's NSIPs search also failed to identify the award of planning permission for Ferrybridge Multifuel 2 (FM2), a Development Consent Order for which was approved in October 2015.[15] Both FM2 and FM1 are located in Knottingley, circa 1 hour and 30 minutes away from the proposed EMERGE incinerator. FM1 and FM2 have a combined capacity of 1.35 million tonnes of waste (primarily as RDF and/or SRF - which would require the dewatering of approximately 1,800,000 tonnes of 'raw' waste) with a combined electrical generating capacity of 180MW (gross).

91. Therefore, with respect only to NSIPs, the applicant seems to have failed to identify existing and emerging incineration capacity to treat approximately 2.67 million tonnes of waste across three locations all of which are within the applicant's 2-hour isochrone. The applicant's failure to identify these substantial and obviously relevant Nationally Significant Infrastructure Project proposals casts further doubt regarding the applicant's claim that the capacity they are proposing for the EMEGRE incinerator is needed to divert waste from landfill.

[13] See: https://infrastructure.planninginspectorate.gov.uk/projects/north-east/boston-alternative-energy-facility-baef/?ipcsection=overview and: https://www.bostonaef.co.uk/
[14] See: https://infrastructure.planninginspectorate.gov.uk/projects/yorkshire-and-the-humber/north-lincolnshire-green-energy-park/ and: https://northlincolnshiregreenenergypark.co.uk/
[15] See: https://infrastructure.planninginspectorate.gov.uk/projects/yorkshire-and-the-humber/ferrybridge-multifuel-2-fm2-power-station/ and: https://multifuelenergy.com/

92. In addition to this NSIP capacity, there is nearly a further 5 million tonnes of existing incineration capacity within the applicant's 2-hour isochrone. Facilities included in this circa 5 million tonne figure are listed in the following table:

Incinerator	Location	Distance from NG11 0EE	Capacity
Newhurst Energy Recovery Facility (under construction)	Newhurst Quarry, Shepshed (near Loughborough)	Less than 30 minutes	350,000
Baddesley Energy from Waste Facility	Off Merevale Lane, Baxterly, Atherstone	Less than 40 minutes	103,000 (RDF) 137,000 raw waste
Stoke Energy from Waste Facility	Campbell Road, Sideway, Stoke-on-Trent	Less than 1 hour 30 minutes	210,000
Kirklees Energy from Waste Facility	Vine Street, Huddersfield, Kirklees	Less than 2 hours	210,000
Newlincs Grimsby Incinerator	South Marsh Road, Stallingborough, Grimsby	Less than 2 hours	56,000
Lincolnshire Energy from Waste Facility	Whisby Road, North Hykeham, Lincoln	1 hour	190,000
Peterborough CC EFW Plant	Fourth Drove, Fengate, Peterborough	1 hour 30 minutes	85,000
Greatmoor EfW	Lower Greatmoor Farm, Edgcott, Aylesbury	Less than 2 hours	345,000
Staffordshire ERF	The Dell, Enterprise Drive, Four Ashes near Cannock	1 hour	340,000
Sheffield ERF	Bernard Road, Sheffield	1 hour	245,000

Battlefield ERF	Battlefield Enterprise Park, Shrewsbury	1 hour 30 minutes	102,000
Runcorn EFW Facility	Picow Road Farm, Weston Point, Runcorn	Less than 2 hours	1,100,000
Dudley Energy from Waste Facility	Lister Road, Dudley	Less than 1 hour 30 minutes	105,000
Wolverhampton Energy from Waste Plant	Crown Street, Wolverhampton	Less than 1 hour 30 minutes	118,000
Tysely Energy from Waste Facility	James Road, Tyesley, Birmingham	Less than 1 hour 30 minutes	400,000
Coventry ERF	Bar Road, Coventry	1 hour	315,000
Milton Keynes Waste Recovery Park	Dickens Road, Old Wolverton	1 hour 45 minutes	93,600
Ardley EFW Plant,	Ardley, Oxfordshire	1 hour 30 minutes	326,300
Javelin Park	Javelin Park, Haresfield	2 hours	190,000

93. The facilities listed in the table above do not include all of the emerging incinerators currently under construction within a 2-hour isochrone of the proposed EMERGE incinerator.

94. In their Planning Statement, at Paragraphs 3.3.13 and 3.3.26, the applicant refers to a Tolvik study published in February 2019. This document is not available in the public domain and is not included with the current planning application. As such, no weight should be given to this document in the planning balance.

95. At Paragraph 3.3.28 of their Planning Statement, the applicant refers to a Tolvik study that they commissioned, as follows:

> *"…Uniper commissioned Tolvik to carry out a residual waste market review to evaluate the availability of waste using a circa 2-hour drive time catchment area from the Power Station site. This review concluded that there is forecast to be a 1.52 million tpa residual waste treatment capacity gap in 2035 (under a Median scenario), based on forecast residual waste arisings and known EfW facilities either fully operational or under construction"*

96. This statement raises some obvious questions, not least questions about where this review can be found, and when was it conducted, the full set of inputs and assumptions that were made to inform the study, and any caveats or cautions acknowledged by the authors of the study.

97. As the Tolvik study referred to at Paragraph 3.3.28 of the Planning Statement is not available for scrutiny, no weight should be given to the study's partially-quoted conclusion in the planning balance.

98. The study was carried out by Tolvik. As such it may be relevant to note the recently published article written by Tolvik's Director, # 3rd party data.

99. The opinion piece, published on the 19th August 2020 on the *letsrecycle.com* website[16], includes the following:

> *"…it increasingly appears that there is one critical skill necessary for a successful project which is being overlooked: 'understanding'… Above all, understanding is the thoughtful application of common sense…Tolvik is regularly asked to assess the future balance between Residual Waste supply and EfW capacity. To date we have assumed that the checks and balances of rational investors, particularly where external project finance is required, will ensure that, unlike northern Europe, the risk of EfW over-capacity in the UK is very low. However, increasingly, project developers seem willing to ignore the need for 'understanding' if it is going to give them the wrong answer.*
>
> *" We see this with our market due diligence reports. As the market tightens, if our analysis is not favourable then we are increasingly being asked to change our assumptions. Most often this is a variant of 'can't you just increase the size of the modelled Catchment Area?' Having engaged experienced independent consultants, this appears to be a deliberate decision to redefine 'understanding'…But ignoring this need for 'understanding', when repeated across multiple projects, is starting to lead us to question whether the risk of EfW over-capacity is as low as we had previously assumed."*

100. Given that the EMERGE applicant has opted for a 2-hour isochrone, instead of the more usual 1-hour isochrone, it would be reasonable to conclude that the facility proposed for Ratcliffe-on-Soar would be incapable of sourcing sufficient feedstock within a 1-hour isochrone.

[16] See: https://www.letsrecycle.com/news/latest-news/understanding-risk-efw-overcapacity/

101. As demonstrated above, once the feedstock catchment area is extended to a 2-hour drive then whilst of course more feedstock becomes theoretically available, a much larger number of existing and emerging incinerators can be said to be competing for that same feedstock.

102. Returning to the national picture, in their ES Volume 1 Main Report, at Paragraph 1.2.8, the applicant states:

> *"The Proposed Development would make an important contribution to the acknowledged shortfall in waste recovery capacity within the United Kingdom (UK). This shortage is resulting in approximately 11 million tonnes per annum (2018) [Footnote 1: 'Approximate figure calculated from Tolvik Consulting – UK Energy from Waste Statistics – 2018 (June 2019).'] of residual waste, capable of being subject to energy recovery, being sent to landfill."*

103. This outdated claim is based on Tolvik's 2018 figures. The UK waste statistics for 2019 are now available, and these show higher levels of domestic incineration capacity than in 2018. The more recent Tolvik report[17] notes that:

> *"In 2019 the tonnage of Residual Waste processed at EfWs in the UK was up 9.9% when compared with the previous year to 12.6 Million tonnes."*

104. Importantly, the quantity of waste incinerated in a given year does not reflect the capacity which is available, in commissioning and under construction.

105. According to Tolvik, in December 2019 across the UK there were:

- 48 fully operational incineration facilities, with a headline capacity of 14.60 million tonnes per annum;
- 5 incinerators in late stage commissioning, with a headline capacity of 0.80 million tonnes per annum; and
- 12 incineration facilities in construction, with a headline capacity of 3.10 million tonnes per annum.

106. This adds up to 18.50 million tonnes of headline capacity in the UK based on existing facilities as of December 2019.

107. Furthermore, in addition to waste currently being exported and being landfilled potentially going to this 18.50 million tonnes of existing incineration capacity, as stated above much of the residual waste currently being sent for incineration or landfill could be recycled or composted.

108. The applicant has not demonstrated that there is any feedstock catchment area that can justify the proposed capacity and location of the EMERGE incinerator.

109. As such, the applicant has failed to demonstrate a need for the proposed incineration capacity.

[17] Available from: https://www.tolvik.com/wp-content/uploads/2020/05/Tolvik-UK-EfW-Statistics-2019-Report-June-2020.pdf

110. As set out above, the applicant has not ruled out the prospect that the EMERGE incinerator would be required to use as feedstock material that could and should be recycled or composted, and the applicant has not demonstrated that their proposal would be compatible with short-, medium- and long-term local and national recycling and waste minimisation targets.

Impacts of decarbonisation on residual waste arising and treatment capacity

111. As set out above, according to the applicant's Climate Change and Sustainability Assessment, the move to Net Zero by 2050 could result in significant reductions of both plastic and food waste in the residual waste stream.

112. According to the applicant's ES Volume 3 Appendix 8-4 analysis, as shown in Table 19: 'Impact on emissions of reducing food and plastic content of incoming waste', the calorific value of the feedstock could fall in the future due to ongoing decarbonisation of the residual waste stream.[18]

113. Such a drop in CV would increase the treatment capacity of all incinerators, not just the EMERGE incinerator. This would result in an increase in incineration capacity accompanied by a reduction in available feedstock for all waste incinerators.

114. The applicant fails to model this eventuality, despite raising the prospect of 'potential improvements associated with decarbonisation of the waste stream' that could bring about this sort of situation.

[18] This fall in CV can be determined by dividing the estimated CO_2 by the estimated carbon intensity, and this shows that the MWh would drop from 342,081 to 326,798 with the change in feedstock. Although not noted by the applicant in Table 19, this drop in CV would actually necessitate more waste to be imported in line with their analysis of Low NCV waste in Table 1 of Appendix 8-4: Carbon Assessment and Sustainability.

ADVERSE VISUAL AMENITY IMPACTS OF THE PROPOSAL

115. Whilst UKWIN will leave detailed evidence regarding the adverse visual amenity impacts, including adverse impacts on the Green belt, to other consultees, we would like to draw attention to a number of relevant planning decisions in this regard.

116. The planning application made by AmeyCespa (East) Limited for an incinerator to be built at land at Levitt's Field, Waterbeach Waste Management Park, Ely Road, Cambridgeshire (PINS Ref 3225123) was refused by the Secretary of State on the 15th of June 2020. According to the Decision Letter[19]:

> *"…the Secretary of State agrees with the Inspector…that the proposed development would have an adverse effect on the character and appearance of the area, and that this brings the proposal into conflict with SCLP Policies NH/2, HQ/1, and objective b. of SCLP Policy S/2. He further agrees that the proposal would also conflict with the Waste SPD and be at odds with the objective of SCDC's Landscape in New Developments SPD March 2010…"*

117. The planning application made by Veolia ES (Hertfordshire) Limited for an incinerator to be built at land at 2 Ratty's Lane, Hoddesdon, Hertfordshire (PINS Ref 3195373), was refused by the Secretary of State on the 19th of July 2019. According to the Decision Letter[20]:

> *"The Secretary of State considers that the significant adverse landscape and visual impacts, which as well as being in conflict with the development plan are also in conflict with emerging plan policies, policies of the Epping Forest Local Plan, policies of the Lee Valley Park Plan, and the Framework, carry considerable weight against the proposal…"*

118. The planning application made by Veolia Environmental Services Ltd for an incinerator to be built at land at New Barnfield, Hatfield (PINS Ref 2192045), refused by the Secretary of State on 7 July 2014. According to the Decision Letter:

> *"The Secretary of State considers that substantial weight should be given to the Green Belt harm by reason of inappropriateness. He considers that the harm to the openness of the Green Belt is real and he gives substantial weight to this harm. He also gives weight to the harm to the perception of a gap between Hatfield and Welham Green in line with the Green Belt aim to prevent neighbouring settlements merging into one another. The Secretary of State considers that there is further significant harm to the character and appearance of the area, and to the amenity of residents and users (particularly the enjoyment of the countryside, the footpath and cycle network, and the outlook from the most affected properties).*

[19] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/892192/Combined_DL_IR_R_to_C_Levitts_Field.pdf

[20] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819027/19-07-19_DL_IR_Addendum_Rattys_Lane_3195373.pdf

"He considers that there would be significant (though less than substantial) harm to the setting of the ensemble of heritage assets at Hatfield House and Park, and he attaches considerable weight and importance to this harm. Due primarily to the scale of the development, the Secretary of State considers that the mitigation proposals would not be fully effective in mitigating these impacts; that this harm would endure for at least the life of the scheme (c. 25 years); and that the existence of such a large building would be a material factor in considering the future potential of the site at that time…he agrees with the Inspector's conclusion that the very special circumstances necessary to justify the development do not exist…"

Dear Councillor,

East Midlands Energy Re-Generation (EMERGE) Centre (Uniper Ltd), County Council Planning Reference: ES/4154

Reputational Damage for East Midlands Development

The proposed East Midlands regional hub seeks to deliver a national focal point for low and zero carbon technology. With an incinerator, the people of the East Midlands are being offered a **high carbon** source of energy with vague suggestions of less carbon intensive future adaptations (details and references below). Inward investment can and should be created without an incinerator, which will serve as an embarrassment to any prospects of building a reputation as a green tech park. Anaerobic digestion, hydrogen fuel, battery storage and other truly ambitious technologies already in use and in development in our region could and should be encouraged as alternative energy supplies. This is all the more galling because, in continental Europe, Uniper is a practitioner of some of these innovative and low carbon technologies. Nottinghamshire and the East Midlands are being treated as unworthy of Uniper's best technology. Will you let them do this to us?

Understanding future waste demand

We all know that waste has got to go somewhere and that we cannot wish it away, but please be assured that there are sensible alternatives to incineration. Uniper seek to persuade you that increased incineration is a reasonable choice for our county and region. Here is why they are wrong:

The Government is planning a more circular economy

The Government's waste strategy (ref 1), with its emphasis on a more circular economy, is dismissed in Uniper's planning application (Section 3.3.33) as being overambitious. Detail is lacking in the Strategy, and Uniper exploit this, failing to mention that the Environment Bill currently passing through parliament contains details of how the strategy will be implemented (ref 2). Uniper, along with the County's current energy policy, refer to many documents that were published before the Climate Change Act was amended in 2019 and therefore lack sufficient ambition. Moreover, the Government's Waste Strategy suggests a **tax on incineration if its waste ambition is not delivered** (p79). The secretary of state

echoed this sanction in a Westminster debate in February of this year (ref 3). This shows that the government intends to put pressure on local authorities such as yourselves to ensure that increases in recycling and other waste reduction measures are implemented.
From the above, it is reasonably safe to assume that government policies will lead to a rapid decrease in waste over the next couple of decades. But, if you believe that a backup plan is needed, the overcapacity of current and planned incinerators elsewhere provide that backup. For details of the overcapacity please see the objection that UKWIN have submitted to the Planning Department. UKWIN give details of the existing and emerging incineration capacity to treat approximately 2.67 million tonnes of waste within the Uniper's 2-hour isochrone to the planning application. A report on incineration capacity nationally was produced by Eunomia in 2017 (ref 4).

Anaerobic digestion

Treatment of biodegradable waste (and a proportion of mixed waste) by anaerobic digestion, possibly linked to heat generation is becoming the method of choice for this waste stream. The Environment Bill on its way through Parliament will introduce compulsory separate food waste collection. Food waste should therefore not be considered as an available resource for incineration.
Anaerobic digesion of biogenic and mixed residual waste with temporary landfill of unrecyclable plastics should be the method of choice for residual waste management. In the words of Sir Ian Boyd. Chief Scientific Advisor at Defra stated to the Commons Select Committee in 2018,
"Quite rightly, we have had a policy of trying to eliminate landfill in this country, because it has been seen as a major source of greenhouse gas pollution and, t o some extent, groundwater pollution. That is because we put biodegradable organics in—food waste, garden waste and things like that. Landfill is a very low-marginal-cost method for storing highly resistant materials like plastics and metals for long periods of time, if we cannot extract the value from them now. .... We should not lose sight of the fact that, in a few decades' time, or maybe a bit longer, we might be mining our landfill sites for the resources they contain. Rather than putting some of those resources into incinerators and losing them for ever, we might want to think differently about the landfill sites."

Air Quality

Air quality is of great concern to us all. Incineration allows particulate matter to be released into the environment, which is very troubling for downwind residents. The local government guide on air quality states: *"There is no safe level for particulate matter (PM10 and PM2.5), while NO2 is associated with adverse health effects at concentrations at and below the legal limits."* (ref 5) There is also the question of how breaches of regulations are dealt with. The quote below from Darren Jones MP at this year's Westminster Hall debate:

"Last year, I drew attention to a series of breaches by a company operating locally that had violated its permit more than a dozen times in the space of a year. It was eventually singled out by the Environment Agency, but a very high frequency of breaches had to occur before action could be taken. It should not take bad behaviour on that level to warrant enforcement action. Even when permits are revoked, the resulting appeals process is long, complicated and costly, imposing an obvious disincentive for the Environment Agency to deal with the individual breaches that collectively create such ***massive problems for local residents****. (ref 6)*

Do you consider it to be your duty as a councillor to look at both the letter of the regulations and the procedures available if those procedures are breached? Do you know what breaches of pollution levels there have been in the past few years in Notts? Are you confident that the responses have been swift and appropriate, and will continue to be swift and appropriate, given constraints on the budget? Please ask yourself how you, as a councillor, can guarantee air quality in the County?

Energy from Waste is a high carbon option

Sorry, this next part is a bit technical, but it's also, to my mind, the most important issue. So thank you for reading this far. The scoping letter sent by Nottingham County Council's planning officer Mike Hankin to Uniper on 6th April this year included a section on Climate Change Energy Efficiency and Sustainability, in which # 3rd party data made the point that the proposed development is a high carbon proposal. Ignoring this, Uniper's Centre Planning statement continues to peddle the myth that the proposed development has the "virtue of generating low-carbon energy" (Section 1.3.2, and throughout). Carbon emissions from incinerators are generally twice as high as their most common alternative, natural gas, and at least ten times as high as emissions from wind and solar installations (ref 7). It is incompatible with the Climate Change Act 2008 (2050 Target Amendment) Order 2019, which aims to reach net zero carbon emissions by 2050. People tend to forget that reaching

net zero doesn't just mean emission reductions: it means **zero** net carbon emissions, such as is only achievable with truly progressive technologies. Uniper is working with these technologies elsewhere, and could do so in Nottinghamshire. Using wind to create green hydrogen is an example of Uniper's better practice elsewhere (ref 8).

Comparisons between energy from waste and landfill/fossil fuel emissions are based on a logical fallacy

Section 3.6.6 of the application states that "the Proposed Development forms an important role in helping to achieve the required emission reductions by reducing greenhouse gas emissions from landfill and also from the generation of low carbon energy". In ES Appendix 8-4 of the planning application, Uniper set out analysis showing how the proposed development would deliver a carbon benefit over landfill estimated at **106,000** tonnes of CO2e per year (also p98 of Planning statement). Their analysis implies that the only choice available to society is that between energy from waste and landfill. This is simply a logical fallacy (a false dichotomy). This type of comparison goes back to the EU's Waste Framework Directive, i.e. this simplistic model was set up in an era where net zero carbon by 2050 was not a legally enforceable target and burning waste seemed like a good idea (ref 9). The dichotomy is inappropriate because there are other sources of electricity, other waste treatments (especially those dealing with methane emissions) and other ways of valuing short cycle carbon, detailed below.

Other sources of electricity.

The comparison of proposed development GHG emissions with fossil fuel emissions in Uniper's proposal is based on an assumption that only fossil fuels or energy from waste can provide electricity flexibly. This is a false assumption. Natural gas is currently used as a flexible electricity source within a broad mix of supplies to the National Grid. Moreover the National Infrastructure Commission has proposed as recently as August 2020 that the proportion of onshore wind, offshore wind and solar be increased to 65% by 2030 (ref 10). Development of hydrogen technology is strongly recommended by both the National Infrastructure Commission and the Committee on Climate Change (ref 11) to provide additional flexibility as well as very low carbon to the grid. In accordance with Net Zero planning objectives and contrary to Uniper's assertion, energy from waste is not needed to fill this role.

Other waste treatments and methane release in landfill

DEFRA figures (ref 12, Table 7) show that that the principal landfill gas emissions are from food, paper and card (75% of methane emissions), which could be diverted to anaerobic digestors to produce heat, power and fertiliser. Anaerobic digestors can also take a proportion of mixed waste. This is a crucial point, as Uniper's case for the carbon emission superiority of the proposed development rests largely on the unburned methane emissions from landfill: these contribute hugely to the greenhouse effect because methane is about 25 times more potent than CO2 as a greenhouse gas.

Short Cycle Carbon

Most carbon footprint analyses draw a distinction between fossil fuel carbon (which was underground for millions of years and has only just re-entered the carbon cycle) and short cycle carbon (waste from plants and trees which absorbs CO2 from the air when growing and releases it when decaying or burning). Up until adoption of the Net Zero target, short cycle carbon has tended to be excluded from calculations, as has been the case for Uniper's calculations in this application. However, as recognised by the Committee on Climate Change, there is a growing need to increase the storage of carbon in the soil (ref 11, page 124). This can be achieved through anaerobic digestion to create compost which can be incorporated into the soil to sustain the billions of soil microorganisms that in turn feed growing plants without the need for the mineral fertilisers that are destroying our soil.

Additional future upgrades

Uniper inform us that their facility will be capable of providing heat to the surrounding area, and thus add to the cleverness and prestige of the proposed hub. But what exactly is on offer? There are serious flaws with this proposal which should be of importance to Councillors. Using waste heat directly can be >90% energy efficient. Converting it to electricity, for onward use as heat and power delivers only around 30% efficiency. If an incinerator is built to last 20-25 years but the houses built to use the heat are expected to last longer, what will happen then? Will the incinerator need to be kept on to keep the houses heated, or will residents be expected to convert to another source of heat at considerable cost? Would those receiving the heat be 'locked in' to paying for that heat, will they pay a fair market price

compared to other options? Could they end up in fuel poverty? And how would any of this be compatible with net zero targets?

Suggestions of additional future upgrades in Uniper's proposal comprise an analysis, as requested in the County Council Scoping letter, of how the proposed development might become a net zero carbon emitter by 2050. As with the heat proposal above, references to future upgrades have no substance (App 8.4, s4.2). It has been pointed out to me that you couldn't sell a half built house saying it was 'roof ready' or an unfinished car, marketed as 'brake ready'.

In summary, incineration can seem like the most economic pathway for waste disposal because the environmental cost of burning that waste or the environmental benefits of reduction, re-use, recycling and composting are yet to be fully reflected in policy and pricing. However, these are false economies that will necessarily be rectified within the early years of the lifespan of a new incinerator because of the Net Zero amendment to the Climate Change Act and additional legislation anticipated in the very near future, such as the current Environment Bill. Such false economies should not be relied upon to justify a Council committing to long-term incineration contracts that would then pose a barrier to recycling waste materials. From the point of view of the Council's reputation in helping to build a green energy hub, the Uniper proposal would provide high carbon energy and encourage waste production in a manner that ignores multiple innovative strategies for both energy and waste. It is a monstrous white elephant.

Yours sincerely

3rd party data

References

(1) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf .

(2) https://www.gov.uk/government/publications/environment-bill-2020/10-mar ch-2020-waste-and-resource-efficiency-factsheet-part-3.

(3) https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.

(4) https://www.eunomia.co.uk/reports-tools/residual-waste-infrastructure-review-12th-issue/.

(5) https://www.local.gov.uk/sites/default/files/documents/6.3091_DEFRA_AirQualityGuide_9web_0.pdf

(6) https://hansard.parliament.uk/Commons/2020-02-11/debates/D1799344-3D26-4DF0-94C1-3AEB397AF375/WasteIncinerationFacilities.

(7) https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf.

(8) https://cr.uniper.energy/?gclid=EAIaIQobChMIzMmHyu2z6wIVz9_tCh2F9ApHEAAYASACEgJLWPD_BwE

(9) https://www.ciwm.co.uk/ciwm/knowledge/the-r1-energy-efficiency-formula.aspx (2009).

(10) https://www.nic.org.uk/wp-content/uploads/Final-Renewables-Recovery-Reaching-Net-Zero.pdf.

(11) https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/

(12) http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=19019 (2013).