Response to invitation for comment set out in 10th January 2025 SoS letter

UKWIN COMMENTS ON DEFRA'S RESIDUAL WASTE INFRASTRUCTURE CAPACITY NOTE

Proposed Development:

North Lincolnshire Green Energy Park

Proposed Location:

Flixborough Wharf, Flixborough Industrial Estate, North Lincolnshire

Applicant:

North Lincolnshire Green Energy Park Limited

Planning Inspectorate Ref:

EN010116

Registration Identification Ref:

20031828

FEBRUARY 2025

UKWIN
United Kingdom Without Incineration Network

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INTRODUCTION AND OVERARCHING COMMENTS

1. UKWIN is grateful for this opportunity to comment on the Residual Waste Infrastructure Capacity Note ('the Capacity Note') that was published by Defra, accompanied by a press release quoting the Circular Economy Minister, on 30th December 2024.
2. This new evidence adds weight to the conclusion that a Development Consent Order (DCO) for the additional incineration capacity proposed for North Lincolnshire should be refused, in line with the National Policy Statements EN-1 and EN-3 and other material planning considerations.
3. In terms of impacts on waste management, the additional evidence supports findings that the proposal for 650,000 – 760,000 tonnes per annum (tpa) of energy from waste (EfW) incineration capacity would be likely to:
    a) Result in creating or exacerbating local and national overcapacity of EfW waste treatment; and
    b) Be of a type and scale so as to prejudice the achievement of national waste management targets, including the statutory Residual Waste Reduction target.
4. Additionally, the Capacity Note increases the adverse weight to be given to the uncertainty regarding whether or not the proposal would actually operate as a combined heat and power (CHP) plant, and whether or not the facility would in fact be accompanied by a genuine carbon capture and storage (CCS) scheme (offering a 90% capture rate) given the various barriers to the viability and deliverability of both CHP and CCS for this proposal.
5. In light of the applicant's intention to acquire land through compulsory purchasing mechanisms the burden of proof rests with the applicant to demonstrate that there is a compelling public interest for the land to be acquired compulsorily.
6. The Capacity Note, including the reference to the existing 9.5 million tonnes of consented energy recovery capacity across 35 EfW plans yet to enter construction (including around a dozen in the Yorkshire & Humber Region with a combined capacity of 1.13 million tonnes, and around half a dozen in the East Midlands with a combined capacity of 3.46 million tonnes) – described as a "*a pool of potential projects that may or may not be constructed in line with local residual waste management needs"* – casts further doubt on the public interest of consenting yet more incineration capacity, especially where such additional capacity relies on compulsory purchase and is of a scale that is more likely to result in local overcapacity.
7. Please note that the emboldened text within quotes is added for emphasis, unless otherwise indicated.

LACK OF NEED FOR PROPOSED WASTE INCINERATION CAPACITY

8. On the 30th of December 2024 the UK Government released a Residual Waste Infrastructure Capacity Note ('the Capacity Note') produced by Defra. This was accompanied by a Government announcement in the form of a press release from Defra and the Circular Economy Minister.

9. The announcement and associated Capacity Note support the conclusion that there is no need for the proposed for North Lincolnshire capacity.

10. The Capacity Note states that:

    "The government is committed to transitioning to a circular economy, in which we maximise resource use and minimise residual waste arisings. Where residual wastes do occur, they should be managed in the most efficient manner. ***This means that we will only support the development of further residual waste treatment infrastructure <u>where they meet a clearly defined need</u> to facilitate the diversion of non-recyclable waste away from landfill…****"*

11. As such, the announcement increases the adverse weight to be given to EfW proposals that fail to show how the proposed new capacity would 'meet a clearly defined need' and that fail to demonstrate that the waste to be used as incinerator feedstock would be comprised exclusively of non-recyclable material that would otherwise go to landfill, and not for example to cement kilns or sustainable aviation fuels (SAF) production facilities.

12. The Capacity Note therefore also increases the adverse weight to be given to proposals for developments, such as the one proposed for North Lincolnshire, that could result in local and/or national overcapacity.

13. As such, the announcement and associated Capacity Note support the case for refusing development consent for the capacity proposed for North Lincolnshire, and together these introduce new barriers to granting consent.

Press release accompanying the Capacity Note

14. The Government announcement, published alongside the Capacity Note, was entitled 'Government to crack down on waste incinerators with stricter standards for new builds' and was accompanied by the following subtitle:

    "Almost half of all waste collected by local authorities in 2022/23 was incinerated with resources that could be recycled being lost".

15. This subtitle confirms that the UK Government continues to hold the position that recyclable material is currently being lost to incineration, i.e. that not all of the material being used as incinerator feedstock is exclusively composed only of genuinely residual waste that could not have been treated at higher tiers of the waste management hierarchy.

16. This position is in line with the Government statement found in the 2018 Resources and Waste Strategy that:

    "Residual waste is the mixed material that is typically incinerated for energy recovery or landfilled. Much of the products and materials contained in this waste could have been prevented, reused or recycled. This is inefficient not only because materials that hold value are being lost, but also incineration and landfill are the most expensive ways to treat waste".

17. The Government's December 2024 press release that accompanied the Capacity Note quoted Circular Economy Minister Mary Creagh CBE MP declaring that:

    "For far too long, the nation has seen its recycling rates stagnate and relied on burning household waste, rather than supporting communities to keep resources in use for longer".

18. This echoes a statement made by the Leader of the House of Commons on the 12th of December 2024, when Lucy Powell MP stated on behalf of the UK Government that:

    "The Government are committed to developing a circular economy ***in which we do not need waste incinerators****…"*

National need for incineration capacity

19. As set out in the Capacity Note's Executive Summary:

    "The modelling undertaken demonstrates that, following implementation of these [Extended Producer Responsibility, Simpler Recycling and Deposit Return Scheme] policies, there will therefore be sufficient residual waste infrastructure capacity to treat forecast municipal residual waste arisings at a national level".

20. The Capacity Note concludes by stating that:

    "*Regardless of the specific technology or advances in sustainability of energy recovery facilities, in order to meet our residual waste reduction target, all residual wastes (excluding major mineral wastes) must not exceed approximately 17.6Mt in 2042. Residual waste infrastructure must not lock-in materials that compromises the achievement of this target, minimising waste and maximising recycling and resource efficiency. To that end,* ***government does not support overcapacity of energy recovery treatment*** *regardless of the technology used and* ***all new developments must demonstrate the genuine need for additional or replacement energy recovery treatment capacity***".

21. It should be noted that, as set out in the Capacity Note's Glossary, the term "energy recovery" refers to "*The process of recovering energy from residual waste, usually in the form of electricity or heat, but also via conversion of waste into fuels for use in other areas of the economy, via the thermal treatment of waste feedstocks*", and is differentiated from the use of the term "energy from waste" which is limited to "*The incineration of residual waste with energy recovery in the form of electricity generation via steam turbine or heat offtake*".

22. This differentiation is further emphasised in the Capacity Note statement in Section 4.2 ('Forecasted residual waste infrastructure capacity') that:

    "*As detailed in Table 2, there is 20.6Mt of residual waste infrastructure capacity in England. Of this total, 14.3Mt is energy recovery infrastructure capacity. In the absence of existing facilities ceasing operation, it is forecast that residual waste capacity will reach 24.9Mt in 2035, of which 18.8Mt will be (operational) energy recovery infrastructure*".

23. When considering the implications of the Capacity Note for determining proposals for additional incineration capacity, including that proposed for North Lincolnshire, it is also important to take account of the following:

    a) Defra's modelling only runs to 2035 and only takes account of some of the anticipated residual waste reduction measures;

    b) The Capacity Note acknowledges the potential for waste to be treated at other types of energy recovery facilities beyond incineration, including as feedstock for the production of Sustainable Aviation Fuel (SAF) and for the production of Solid Recovered Fuel (SRF) for use in cement kilns and for the production of Recycled Carbon Fuels (RCF) to contribute to meeting the Renewable Transport Fuels Obligation (RTFO), but does not model the capacity impacts of these alternative uses for residual waste that would compete with waste incineration; and

    c) A range of the Capacity Note's acknowledged assumptions and limitations are 'conservative' in that they tend to underestimate the potential for incineration overcapacity.

Statutory Residual Waste Reduction Target

24. The Capacity Note opens with a reference to how:

    "*The Environmental Targets (Residual Waste) (England) Regulations 2023 set a statutory target to ensure that the total mass of all residual waste (excluding major mineral wastes) arising in England for 2042 does not exceed 287kg per person. This is the equivalent of a 50% reduction from 2019 levels*".

25. The Capacity Note focusses on the impact of the Collection and Packaging Reforms, i.e. Extended Producer Responsibility for packaging, Simpler Recycling, and the Deposit Return Scheme for drinks containers.

26. Together these measures are generally expected to move England around halfway towards the achievement of the statutory target to halve all residual waste arising by 2042 relative to the 2019 base year.

27. The Government's consultation document for their target to halve residual waste stated:

    "This target is ambitious, with the major changes set out in CPR [Collection and Packaging Reforms] only expected to get us halfway towards our target. Meeting the target will require progress beyond the current commitment to achieve a 65% municipal recycling rate by 2035, and would represent a municipal recycling rate of around 70-75% by 2042…"

28. The associated Defra impact assessment from 2022 anticipated further measures that could be taken to help meet the target to halve residual waste, including *"Price-based levers"* for *"making it more expensive to dispose of waste by sending it to landfill or putting it through incineration"* while acknowledging that this could result in *"Potential disruption of the economics of landfill/incineration"* and *"Reduced gate fee income for residual waste operators and exporters".*

Feedstock demands for energy recovery facilities other than incinerators

29. In addition to the potential for residual waste to be diverted away from incineration and towards the top tiers of the waste management hierarchy, when considering new incineration capacity it is necessary to also consider the potential that new incineration capacity might be diverting waste feedstock from alternative residual waste treatment options.

30. Furthermore, when considering the overall level of residual waste treatment capacity within a given area it is necessary to consider how material could be used as feedstock for other forms of energy recovery apart from energy from waste incineration.

31. Failure to take adequate account of these considerations could result in a need for incineration capacity being identified which does not in fact exist.

32. Such a failure would allow an excess of incineration capacity to be built, which would be contrary to UK Government policy which seeks to avoid incineration overcapacity at local and national levels.

33. The ‘Future of energy recovery’ section of Defra’s 30th December 2024 Capacity note acknowledges that:

    *"**Residual waste infrastructure outputs, specifically those produced via advance thermal treatments and advanced conversion technologies, have the potential to deliver carbon savings in other areas of the economy beyond the waste sector. In this context, competition to access residual waste feedstocks may increase significantly in future**. For example, the Department for Transport has confirmed support for use of the fossil component of residual waste, in addition to the biomass portion, through the Renewable Transport Fuel Obligation (RTFO) as a feedstock to produce recycled carbon fuels for the transport sector".*

34. The Capacity Note identifies three types of energy recovery apart from energy from waste, comprising:

    a) Waste-derived Sustainable Aviation Fuel (SAF) production facilities;

    b) Plastic-derived Recycled Carbon Fuel to be used as transport fuel under the Renewable Transport Fuel Obligation; and

    c) Cement and Lime Kilns using waste as an alternative to conventional fossil fuels.

35. As set out in Appendix A (‘Non-Incineration Demands for Residual Waste in England’, below), the non-incineration demand for residual waste is estimated to be around 7 million tonnes per annum for the Central demand estimate.

36. This is summarised in the following Table:

Demand for residual waste feedstock	Lower	Central	Higher
(4 or 5) Waste-derived Sustainable Aviation Fuel (SAF) production facilities referred to in Defra’s Capacity Note	3,383	4,817	6,886
Plastic-derived Recycled Carbon Fuel to be used as transport fuel under the Renewable Transport Fuel Obligation	932	1,118	1,398
Cement and Lime Kilns using waste as an alternative to conventional fossil fuels	725	1,100	1,800
Total (ktpa)	**5,040**	**7,035**	**10,084**

37. These estimates do not include the further non-incineration demands for residual waste feedstock associated with:

    d) Waste to be used for hydrogen production processes, including eligible projects using residual waste feedstocks to produce low carbon hydrogen under the Net Zero Hydrogen Fund, Hydrogen Production Business Model, and the Hydrogen BECCS Innovation Programme (referred to but not quantified in the Capacity Note);

    e) Non-plastic residual waste (i.e. waste biomass) to be used as Renewable Transport Fuel Obligation (RTFO) fuel (referred to but not quantified in the Capacity Note); or

    f) Residual waste to be treated at biomass plants.

31. As such, the actual level of demand for residual waste to be used for types of energy recovery other than energy from waste incineration could be expected to exceed the figures provided in the Table above.

How the capacity proposed for North Lincolnshire could result in over-capacity of EfW waste treatment at a national level

33. In REP6-043 UKWIN set out how the capacity proposed for North Lincolnshire is forecast to result in over-capacity of EfW waste treatment at a national level.

34. While the applicant has disputed this claim, such a conclusion would be consistent with the applicant's REP6-032 Annex A Table 1 response to ExQ2 which indicated that when 'waste as fuel available' is considered against 'EfW capacity available' and 'other uses for residual waste' there would be national EfW over-capacity from 2026.

35. Consideration of Defra's Capacity Note supports the conclusion that consenting the North Lincolnshire plant would be likely to result in over-capacity of EfW waste treatment at a national level.

36. According to Defra's Capacity Note:

    "[Defra's] modelling undertaken demonstrates that, following implementation of these policies [i.e. Defra's Collection and Packaging Reforms]*, there will therefore be sufficient residual waste infrastructure capacity to treat forecast municipal residual waste arisings at a national level"*.

37. The capacity proposed for North Lincolnshire was not relied upon by Defra to reach this conclusion, and as such the capacity proposed for North Lincolnshire should be considered surplus to national requirements.

33. EN-1 Paragraph 3.3.40, and other paragraphs found elsewhere in both EN-1 and EN-3, confirm that proposed new waste incineration capacity: *"…must not…result in over-capacity of EfW waste treatment at a national…level"*.

34. As such, the North Lincolnshire proposal should not be granted a DCO.

35. It should be noted that Defra's Capacity Note calculations are based on the anticipated impacts of the Collection and Packaging Reforms, which taken together only enables England to reach halfway to the statutory Residual Waste Reduction target, with other measures expected to bridge the gap.

36. As referred to in the Capacity Note:

    "*Regardless of the specific technology or advances in sustainability of energy recovery facilities, in order to meet our residual waste reduction target, all residual wastes (excluding major mineral wastes) must not exceed approximately 17.6Mt in 2042. Residual waste infrastructure must not lock-in materials that compromises the achievement of this target, minimising waste and maximising recycling and resource efficiency. To that end, government does not support overcapacity of energy recovery treatment regardless of the technology used and all new developments must demonstrate the genuine need for additional or replacement energy recovery treatment capacity*".

37. A requirement to consider the Residual Waste Reduction target is also set out in EN-1 Paragraph 4.3.20, which reads:

    "*The Government has set 13 legally binding targets for England under the Environment Act 2021, covering the areas of: biodiversity; air quality; water; resource efficiency and waste reduction; tree and woodland cover; and Marine Protected Areas. Meeting the legally binding targets will be a shared endeavour that will require a whole of government approach to delivery. The Secretary of State have regard to the ambitions, goals and targets set out in the Government's Environmental Improvement Plan 2023 for improving the natural environment and heritage. This includes having regard to the achievement of statutory targets set under the Environment Act*".

38. The Capacity Note figure of 18.8 million tonnes of energy from waste incineration capacity by 2035 (which excludes the capacity proposed for North Lincolnshire) exceeds the anticipated level of residual waste arising of 17.6 million tonnes.

39. The Capacity Note explains how:

    "*Based on current population growth estimates, the total volume of residual waste (excluding major mineral wastes) in England in 2042 will need to be at most approximately 17.6Mt to meet the legally binding residual waste target. This is for both municipal and non-municipal residual wastes, and acts as a long-term signal for our residual waste treatment capacity needs that should be taken into account when planning or considering residual waste treatment infrastructure*".

and how:

"*Based on current population growth estimates and the legally binding target for the total mass of residual waste (excluding major mineral wastes) to not exceed 287kg per person, the total volume of all residual waste (excluding major mineral wastes) in England in 2042 will need to be at most approximately 17.6Mt"*.

40. If we now account for the 7 million tonnes of feedstock demand for energy recovery facilities other than EfW incinerators, the maximum level of operational EfW incineration capacity would need to fall from the 18.8 million tonnes of capacity referred to in the Capacity Note to only around 10.6 million tonnes of EfW waste incineration capacity, and that is before account is taken of the fact that some residual waste is unsuitable for combustion.

41. This reinforces the notion that the 650,000 – 760,000 tonnes per annum of additional capacity proposed for North Lincolnshire could result in over-capacity of EfW waste treatment at a national level and could prejudice the achievement of the Residual Waste Reduction target.

42. In this regard it should be noted that EN-3 Paragraph 2.7.102 makes clear how:

"*The Secretary of State should be satisfied, with reference to the relevant waste strategies and plans, that the proposed waste combustion generating station is in accordance with the waste hierarchy and of an appropriate type and scale so as not to prejudice the achievement of local or national waste management targets in England*…"

How the capacity proposed for North Lincolnshire could result in over-capacity of EfW waste treatment at a local (regional) level

43. UKWIN provided evidence (e.g. in REP6-043) showing how the incinerator proposed for North Lincolnshire would exacerbate local and regional overcapacity when consideration is given to the 2042 Residual Waste Reduction target.

44. While the applicant has disputed this claim, such a conclusion would be consistent with the applicant's REP6-032 Annex A Tables 2-4 response to ExQ2 which indicated that when 'waste as fuel available' is considered against 'EfW capacity available' and 'other uses for residual waste' there is already EfW over-capacity in the Yorkshire & The Humber Region, and that there would be EfW over-capacity in the combined Yorkshire & The Humber and East Midlands Regions from 2035, and that the level of capacity proposed for North Lincolnshire far exceeds (i.e. is more than double) the 'waste as fuel available' from North Lincolnshire.

45. Consideration of Defra's Capacity Note supports the conclusion that the North Lincolnshire plant would be likely to result in over-capacity of EfW waste treatment at a local and regional levels.

46. In light of the Capacity Note and the matters set out above, some region-specific considerations arising from the Capacity Note should be explored.

47. Approximately a dozen consented incinerators in the Yorkshire & Humber Region with a combined capacity of 1.13 million tonnes and around half a dozen consented incinerators in the East Midlands with a combined capacity of 3.46 million tonnes) are referred to within what the Capacity Note.

48. Defra's Capacity Note described these projects as providing

    "a pool of potential projects that may or may not be constructed in line with local residual waste management needs".

49. The Capacity Note mentions the potential for waste to be sent to cement kilns. According to the Environment Agency's Waste Data Interrogator, over half of England's non-major mineral waste that went to cement or lime kilns for co-incineration in 2022 and 2023 was treated in the East Midlands, as follows:

Plant	2022	2023
Ketton Works	153,241	135,770
Hope Cement Works	141,422	98,171
Tunstead Cement and Lime Works	94,523	157,859
Whitwell Quarry Lime Works	35,214	34,273
East Midlands Total (in tonnes)	**424,400**	**426,073**

50. Assuming a 75% conversion rate, it would have taken around 565,000 tpa of waste to produce this much waste for cement kilns.

51. Additionally, the Capacity Note mentions the use of waste-to-SAF capacity as another destination for residual waste treatment and explicitly refers to the 500,000 tpa Velocys plant in Immingham which is located within the Yorkshire & The Humber Region.

52. As such, the proposed North Lincolnshire capacity cannot be justified, because that capacity is not needed to treat local waste, and neither is the facility's proposed location justified for treating non-local waste.

Comments on the applicant's approach to calculating feedstock availability in light of the Capacity Note

32. As set out in the May 2023 Statement of Common Ground (SoCG) between UKWIN and the applicant [REP9-029], the applicant makes a number of assumptions relating to RDF supply that differ from those made by UKWIN.

33. We wish to comment on some of these applicant assumptions in lights of the Capacity Note, using the relevant section headings from the SoCG:

    a) **Closures, e.g. due to carbon capture or facility age:** The applicant assumes more closures due to facility age than Defra assumed in the Government's Capacity Note.

    b) **Achieved capacity factor:** The Capacity Note acknowledges the potential for the diversion of plastic away from EfW to result in increased capacity as the result of the lower calorific value (CV) of the remaining feedstock.

    c) **Non-R1 projects:** While Defra is exploring how to incentivise the decommissioning of EfW plants that are less efficient, Defra – in stark contrast to the approach adopted by the North Lincolnshire applicant – does not assume that all non-R1 EfW plants will be subject to early decommissioning, i.e. closure before the facility reaches the end of its operational life.

    d) **RDF exports for 2024-2026:** Whilst Defra's Capacity Note acknowledges uncertainties, Defra assumes that RDF export will fall to 1.6 Mt in 2024 and then to only 500 kt by 2035. Unlike the applicant, who assumes that RDF exports would be zero from 2024 onwards, Defra never assumes RDF export will fall to zero.

    Defra's approach is set out as follows:

    "Future RDF exports are forecast using the assumption that RDF exports fall by 20% of new EfW capacity that comes online in the previous year".

38. Defra's Capacity Note calls into question the robustness of the assumptions relied upon by the applicant in many important respects, including with regard to the applicant's approach to closure / decommissioning of existing operational EfW facilities, capacity factors, the closure of non-R1 EfW facilities, and the level of RDF export now and in the future.

39. These shortcomings combine to undermine the applicant's claims regarding the purported need for the new capacity proposed for North Lincolnshire.

Capacity Note assumptions and limitations that serve to underestimate incineration overcapacity

53. Defra's Capacity Note acknowledges a series of limitations, for example Defra's modelling only runs to 2035 and only takes account of some of the anticipated residual waste reduction measures.

54. Additionally, as is acknowledged in the Capacity Note, Defra did not model changes in waste feedstock composition, e.g. Defra has not modelled how a reduction in calorific value (CV) from the diversion of plastics away from incineration could increase the quantity of waste feedstock that could be processed at existing incineration plants.

55. As such, at Appendix B of this submission, UKWIN has provided an assessment of some of the key assumptions and limitations acknowledged within the Capacity Note.

56. This assessment shows how the issue of incineration overcapacity both nationally and more locally/regionally could be significantly more acute than one would infer from a cursory reading of the Capacity Note.

COMBINED HEAT AND POWER (CHP) VIABILITY

57. The Capacity Note and associated announcement highlight the adverse climate impacts of incineration and signal a reduced tolerance for EfW plants with poor carbon credentials.

58. The Capacity Note explains how:

    "*…For those energy recovery developments we do need, we will only support projects that offer the best efficiency and are future proofed towards supporting our net zero objectives. This means that* ***further developments must be able to demonstrate that making use of the heat they produce is viable****…*"

59. This implies a move away from historic expectations that proposals merely demonstrate that they are 'CHP ready', instead adopting the stricter expectation that proposals demonstrate through the planning regime that they are actually 'CHP viable'.

60. Such an interpretation would be consistent with the Government's characterisation of the new stricter standards as a 'crackdown' on incineration.

61. In this regard attention is drawn to the applicant's REP9-009 evidence that the EfW facility proposed for North Lincolnshire would not be 'CHP viable' in the first instance.

62. On electronic pages 62 and 63 of REP9-009 we read how, in response to the question: "*Is the new plant a CHP plant at the outset (i.e. are there economically viable CHP opportunities at the outset)?*" the applicant replies: "*No*".

63. While failure to be CHP-viable should weigh against the proposal, it should be noted that simply providing a viable CHP scheme would be inadequate to overcome the lack of need for the proposed waste management capacity.

CARBON CAPTURE AND STORAGE (CCS) READINESS

64. Defra's Capacity Note makes repeated references to carbon capture.

65. For example the Capacity Note states:

    "*For those energy recovery developments we do need,* ***we will only support projects that offer the best efficiency and are future proofed towards supporting our net zero objectives****. This means that further developments* ***must be able to demonstrate*** ***that…they can be built carbon capture ready****, in accordance with the government's 'decarbonisation readiness' requirements once they come into force*…

    "…*The Department for Energy Security and Net Zero (DESNZ) are updating the decarbonisation readiness requirements…to include EfW facilities. The proposals would require new build and substantially refurbished EfW facilities to be built in such a way that they can* ***easily*** ***decarbonise*** *by retrofitting carbon capture within the plant's lifetime*".

66. The Environment Agency has no powers to require current applicants for environmental permits to demonstrate carbon capture readiness under the current permitting regime, as this requirement does not apply to proposals, where a permit application is made to the Environment Agency prior to March 2026.

67. It is reasonable to expect the North Lincolnshire NSIP proposal to be subject to an environmental permit application prior to this date.

68. As such, it falls to the planning regime to either require genuine carbon capture where this is viable or to refuse development consent in the event that carbon capture is not viable, e.g. due to being outside a proposed carbon capture cluster rather than being part of an actual carbon capture cluster.

69. UKWIN has repeatedly debunked the applicant's carbon capture claims, e.g. as part of DR-001 (Paragraphs 6-13), REP2-108 (Paragraphs 57-61), REP9-050 (Paragraph 50), and PID-003 (Paragraphs 3-20).

70. This should weigh against the proposal in the planning balance.

71. While failure to deliver genuine carbon capture should weigh against the proposal, it should be noted that simply providing a comprehensive CCS scheme would be inadequate to overcome the lack of need for the proposed waste management capacity.

APPENDIX A: NON-INCINERATION DEMANDS FOR RESIDUAL WASTE IN ENGLAND

72. As set out above, at Paragraphs 31 and 32, the non-incineration demand for residual waste is estimated to be around 7 million tonnes per annum for the Central demand estimate.

73. Details of the figures that were used to inform the table at Paragraph 32 are set out in this Appendix.

Use of waste for Sustainable Aviation Fuel (SAF)

74. The Capacity Note analysis does not model the impact of Sustainable Aviation Fuel (SAF) capacity, despite the explicit reference to how the Government's Advanced Fuels Fund is being used to support several residual waste gasification projects seeking to produce SAF.

75. According to the Capacity Note section entitled 'Future of energy recovery':

"Conventional incineration with energy recovery currently predominates the mix of energy recovery infrastructure within England with a small number of gasification facilities, generally using the syngas produced to generate electricity via a gas turbine. This mix may change in future as wider decarbonisation ambitions increasingly inform investment decisions for new infrastructure. The Advanced Fuels Fund has already awarded a total of £69,494,000 to support several residual waste gasification projects seeking to produce sustainable aviation fuel (SAF) in the UK.

"These include Alfanar's Lighthouse Green Fuels project in Teesside, Fulcrum BioEnergy's NorthPoint facility in Ellesmere Port, Esso's Solent SAF project, and Velocys' Altalto project in Immingham. The Department for Transport's ambition is to see 5 commercial-scale sustainable aviation fuel production facilities under construction in the UK by 2025".

76. Waste feedstock requirement of Defra's 4 named SAF plants:

SAF production facility (Capacity)	Waste feedstock requirements
Esso's Solent SAF project (179kt/y or circa 223.75 million litres of SAF)	1,705,809 ktpa
Alfanar's Lighthouse Green Fuels project in Teesside (124.2kt/y or circa 155.25 million litres of SAF)	1,000,000 ktpa
Fulcrum BioEnergy's NorthPoint facility in Ellesmere Port (83.7kt/y or circa 104.625 million litres of SAF)	600,000 ktpa
Velocys' Altalto in Immingham (37.4kt/y or circa 46.755 million litres of SAF)	500,000 ktpa
Total waste feedstock requirement (for circa 530 million litres of SAF per annum)	**>3.8 million tea**

77. Details of these four named SAF plants are set out below, but it should be noted that the capacities for 3 of these plants (Alfanar's Lighthouse Green Fuels project, Fulcrum BioEnergy's NorthPoint facility, and Velocys' Altalto plant in Immingham) are as agreed in May 2023 as part of the SoCG between the applicant and UKWIN [REP9-029].

78. Those 3 plants were awarded Advanced Fuels Funding in December 2022, with Esso's Solent SAF project awarded Advanced Fuels Funding in November 2023.

79. Subsequently additional Government financial support, in the form of the Government's recently announced SAF revenue support mechanism, was made available for SAF projects following the Sustainable Aviation Fuel Mandate coming into force at the start of 2025.

80. Should the fifth SAF project referred to in Defra's Capacity Note be a waste-to-SAF plant of a similar scale and conversion efficiency to the other SAF production facilities, then the total waste feedstock requirement for these 5 SAF production facilities (as per the Central scenario outlined above) would rise from just over 3.8 million tonnes to **more than 4.8 million tonnes per annum**.

81. This analysis has fed into the following 3 SAF feedstock demand scenarios:

    a) **Lower** – Based on only the 4 named waste-to-SAF production facilities, and assuming that Esso's Solent SAF project is at the highest end of the range for conversion efficiency (which results in the lowest feedstock demand), to arrive at the **3,383 ktpa waste feedstock demand** figure set out above.

    b) **Central** – Based on the 4 named waste-to-SAF production facilities alongside the 5th plant referred to in the Capacity Note, with the average of the known parameters from the named SAF production facilities used for any unknown parameters for Esso's Solent SAF project and for the unnamed project), to arrive at the **4,817 ktpa waste feedstock demand** figure set out above.

    c) **Higher** – Based on the 4 named waste-to-SAF production facilities alongside the 5th plant referred to in the Capacity Note, with the higher of the known parameters from the named SAF production facilities used for any unknown parameters for Esso's Solent SAF project and for the unnamed project), to arrive at the **6,886 ktpa waste feedstock demand** figure set out above.

Use of waste for recycled carbon fuels under the RTFO

82. In addition to supporting plastic-derived 'Recycled Carbon Fuels' (RCFs) through the SAF Mandate, the UK Government is also expecting to support RCF through the Renewable Transport Fuel Obligation (RTFO).

83. According to the Capacity Note:

    "…the Department for Transport has confirmed support for use of the fossil component of residual waste, in addition to the biomass portion, through the Renewable Transport Fuel Obligation (RTFO) as a feedstock to produce recycled carbon fuels for the transport sector".

84. While the biogenic fraction of the RTFO fuel could come from a variety of sources, Recycled Carbon Fuels are specifically intended for non-recyclable waste plastic, and as such in theory is directly competing with waste incineration as a form of landfill diversion for plastics.

85. Development Renewable Transport Fuel certificates (dRTFcs) are a key form of subsidy under the RTFO. In February 2024 the Department for Transport (DfT) announced that the Government would be providing 1 dRTFc per litre of eligible fuel supported, which was Option 1b of the preceding consultation.

86. The DfT's Table 1 analysis of those options models projected supply of RCFs to inform their cost benefit analysis, with the Option 1b analysis stating this will reach 567.9 litres by 2032.

87. The 60%, 50% and 40% RCF conversion efficiency values and the 0.85/l conversion rates set out in the DfT's February 2024 consultation outcome have been adopted for the analysis set out in the table below.

88. Modelling these DfT figures results in the following plastic waste feedstock demands for waste for recycled carbon fuels production under the RTFO:

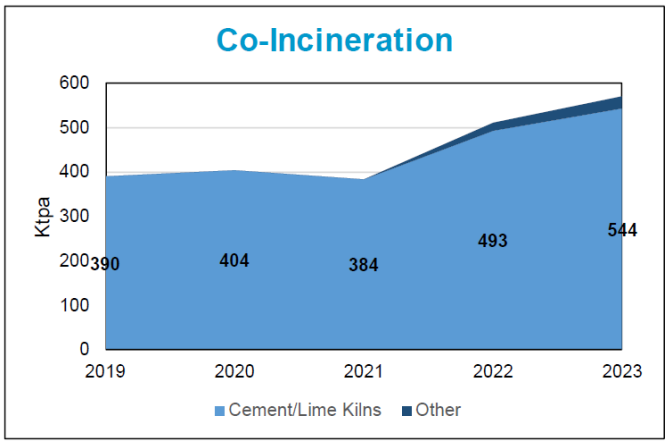
Parameter	Lower	Central	Higher
Volume (million litres)	657.9	657.9	657.9
Density (kg/l)	0.85	0.85	0.85
Yield (%)	60%	50%	40%
Total waste feedstock demand (kt)	**932**	**1,118**	**1,398**

Use of waste for cement kilns

89. The Capacity Note also acknowledges that cement kiln capacity had not been quantified by Defra and was therefore not modelled.

90. Data is available that indicates the level of SRF/RDF that was used for cement kilns and lime kilns in 2023.

91. Tolvik's May 2024 EfW statistics for 2023 includes the following:



In 2023, 10 cement and lime kilns (out of 11 operational facilities in the UK) accepted a total of 544kt of SRF under EWC code 19 12 10. This was a 10% increase on the tonnage in the previous year reflecting investment activity at several kilns. The total tonnages of other wastes co-incinerated at these facilities were broadly in line with previous years.

In addition, in 2023 three facilities including Lancing, consented for the processing of biomass, and / or Refuse Derived Fuel ("RDF") only – accepted 28kt of RDF.

92. This implies that at least 544 ktpa of Solid Recovered Fuel (SRF) or Refuse Derived Fuel (RDF) was treated (co-incinerated) at cement or lime kilns in the UK in 2023, the majority of which would have been in England.

93. If cement kiln use continues to increase at the historic rate of just over 100 ktpa per annum until 2027 then the quantity of residual 19 12 10 waste co-incinerated would double to around 1 million tonnes per annum.

94. Assuming continued increases in the use of SRF in cement kilns is not unreasonable and is supported by several recent announcements.

95. For example, in August 2024 SRF producer Advetec published a report which described SRF as an *"immediate way to reduce the reliance on landfill and incineration"* through using processed waste feedstock for industries such as cement kilns.

96. Advetec's report argues that:

    "As large-scale industries like cement production seek to decarbonise, ***demand for alternative fuels like SRF increases****. This demand is driven by the fact that SRF can be made with a higher proportion of biogenic carbon – which is not subject to the Emissions Trading Scheme (ETS)".*

97. Another example is provided by the April 2024 Biffa announcement, published in a press release entitled '*Transforming waste into fuel: Biffa acquires Hull pellet plant*', that it would be bringing a dormant 100ktpa waste-to-SRF plant in Hull back into operation, stating:

"Biffa…has strengthened its Resources & Energy capability following the acquisition of a business that transforms residual waste into fuel. Biffa has acquired the entire share capital of Eco-Power Green Energy Ltd, a subsidiary of Eco-Power Environmental Ltd, along with a dormant plant in Hull and seven new members of staff. The plant has the capacity to produce more than 100,000 tonnes of solid recovered fuel (SRF) pellets each year from non-recyclable household waste. SRF pellets are a high quality, sustainable, alternative to fossil fuel used primarily by the cement industry. Biffa will recommission the plant over the next few months".

98. Were other waste types in addition to 19 12 10 included in the calculation then the quantity of waste co-incinerated at cement and lime kilns would be even higher than Tolvik's 544 ktpa figure.

99. We note that the Mineral Products Association's 'Concrete Centre' website, on a webpage entitled "Recycled content in concrete", states:

"*In 2023 47% of the thermal energy used in the UK to manufacture cement was supplied from waste-derived fuels. These alternative fuel sources comprise hard to recycle materials* ***diverting <u>over 1.2 million tonnes</u> of waste from landfill every year****.*

"This co-processing plays a vital role in the nation's waste reduction strategy and offers opportunities for upcycling minerals into new cement – combining simultaneous material recycling and energy recovery in a single thermal process".

100. This suggests that the extent of waste usage at cement kilns already exceeds 1 million tonnes per annum, with the potential to increase well beyond this figure.

101. This is unsurprising as according to a Cemex press release from December 2024, based on their experience of their Rugby Cement Plant, around 1.333 tonnes of SRF are required to replace each tonne of coal (as SRF has a lower calorific value (CV) than coal).

102. It should also be noted that the production of 1 tonne of SRF or RDF requires more than 1 tonne of waste feedstock, as the SRF/RDF production process entails dewatering, metals removal, etc.

103. Based on a 75% yield rate, the 544 kilotonnne figure would equate to a demand for around 725 kilotonnes of 'raw' waste (at a rate of around 1.33 tonnes of waste per tonne of SRF, i.e. 100 ÷ 75 = 1⅓).

104. According to the Environment Agency's Waste Data Interrogator, in 2022 and 2023 around 780,000-800,000 tonnes per annum of non-major mineral waste from within England was treated at English cement or lime kilns.

105. This includes SRF (which is classed as ‘municipal waste’) as well as some other waste, such as end-of-life tyres, that is excluded from the Government’s definition of ‘municipal waste’ but which is included in the Government’s broader definition of ‘non-major mineral waste’ for the purpose of the target to halve residual waste per capita by 2042.

106. Cement kilns are currently included within the scope of the UK’s Emissions Trading Scheme (ETS) whereas incineration is currently excluded.

107. Incineration will soon join the UK ETS, so it would be reasonable to expect that once the current ‘ETS barrier’ is removed, i.e. once incineration is also covered by the UK ETS, even more waste will be diverted from incineration towards cement kilns in the future.

108. This analysis has fed into the following 3 SRF feedstock demand scenarios for cement and lime kilns:

a) **Lower** – Based on the quantity of 19 12 10 incinerated at cement and lime kilns in 2023 and a 75% ‘raw’ waste to SRF yield, to arrive at the **725 ktpa** figure.

b) **Central** – Based on the bottom end of the range of additionally taking account of factors such as:

- the Mineral Products Association statement regarding having diverted over 1.2 million tonnes of waste from landfill;
- the potential for increases in the quantity of 19 12 10 incinerated at cement and lime kilns based on historic trends;
- the economic drivers associated with the UK ETS; and
- Biffa’s announcement that they would bring their 100 ktpa waste-to-SRF plant in Hull back into operation

to arrive at the **1,000 ktpa** figure.

c) **Higher** – Based on the top end of the range of taking account of the factors set out above for the Central Scenario, to arrive at the **2,000 ktpa** figure (which should not be read as the theoretical maximum).

Alfanar's Lighthouse Green Fuels project in Teesside

109. January 2024 publication of 'Advanced Fuels Fund (AFF) competition winners' awarded the project £8.67m (in addition to the £15m awarded under the Green Fuels, Green Skies competition) and states:

"Based in the Industrial Cluster at Teesside, the project is developing a commercial scale plant that uses gasification and Fischer-Tropsch technology to convert biogenic and non-biogenic wastes and residues into SAF. The plant is expected to be under construction in 2025, operational in 2028, and produce 124.2 kt/y of SAF when at full operational capacity."

An article in Hydrocarbon Processing entitled 'Worley wins contract for Alfanar's Lighthouse Green Fuels project in North East of England' dated 1st June 2022 states:

*"The project, known as Lighthouse Green Fuels, will convert residual solid waste into SAF and green naphtha. The project will process approximately **1 M tons of residual solid waste every year – such as municipal solid waste, refuse-derived fuel or solid recovered fuel** – into approximately 3,200 bbl/day of SAF and green naphtha"*.

110. An article entitled 'N+P 'actively seeking' waste for aviation fuel deal' published on 15th May 2023 by Letsrecycle opens as follows:

*"The N+P Group has unveiled a partnership with the Saudi company Alfanar to source and process **1 million tonnes of waste per year** to be used to produce sustainable aviation fuel (SAF)" and that goes on to explain how: "For the SAF plant with Alfanar, N+P says e**veryday non-recyclable household and business rubbish, contaminated recycling loads and MRF residues can all be sorted by N+P for use in the process, instead of 'being sent to landfill, burnt in incinerators or exported**'".*

Fulcrum BioEnergy's NorthPoint facility in Ellesmere Port

111. The January 2024 publication of 'Advanced Fuels Fund (AFF) competition winners' awarded the project £17.76m and states:

"Based in Ellesmere Port, Cheshire, the project is developing a commercial scale plant that uses gasification and Fischer-Tropsch technology to convert black bin bag waste into SAF. The plant is expected to be operational in 2027 and produce 83.7 kt/y of SAF when at full operational capacity."

112. The website for this project states:

"Waste Delivered Per Year: 600,000 metric tonnes":

113. A press release from Jet2 from 27th April 2023 states:

"Production of SAF is expected to commence at the plant in 2027, and when at full capacity 600,000 tonnes of non-recyclable household waste, which would otherwise have been destined for incineration or landfill, will be converted into around 100 million litres of SAF annually. The NorthPoint plant will use Fulcrum's proven waste-to-fuel process and will directly benefit from the IP gained from operations of its pioneering first commercial scale waste-to-fuels facility, Sierra BioFuels, situated outside of Reno Nevada, in the United States.

"The announcement means that Jet2.com, the UK's third largest airline, will receive a significant volume of SAF produced at the plant once in operation. The SAF is expected to achieve net emissions reductions totalling around 400,000 tonnes of CO_2 for Jet2.com over the 15 year period of the agreement".

114. A follow-up article published by Fastmarkets on the 26th of September 2024 quotes a Jet2 spokesperson as stating on the 17th of September 2024 that:

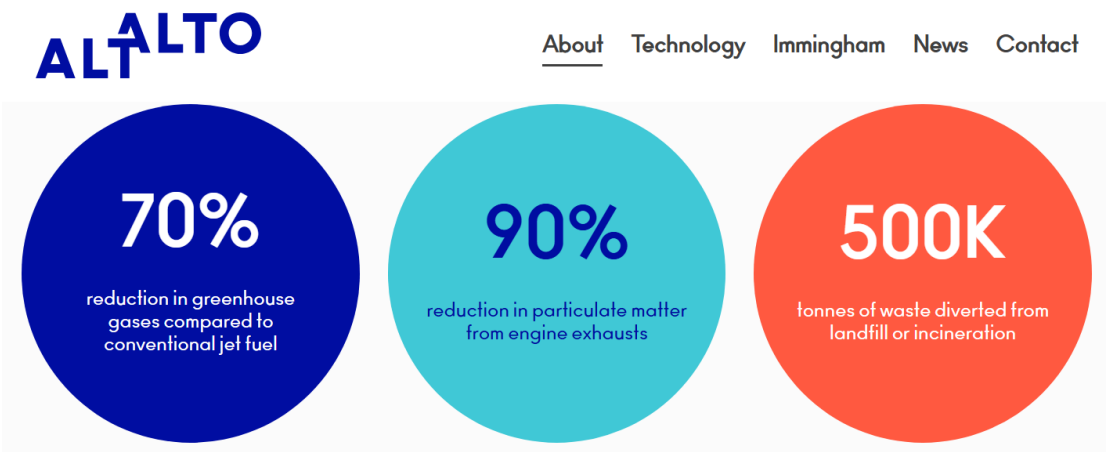
"As we announced in April 2023, production of SAF is expected to commence at the Fulcrum NorthPoint facility in 2027-2028, and there is no change to these plans".

Velocys' Altalto facility

115. The January 2024 publication of 'Advanced Fuels Fund (AFF) competition winners' awarded the project £27m and states:

"Based in Immingham, Lincolnshire, the project is developing a commercial scale plant that uses gasification and Fischer-Tropsch technology to convert black bin bag waste into SAF. The plant is expected to be operational in 2028 and produce 37.4 kt/y of SAF when at full operational capacity".

116. Altalto's webpage for the project lists one of the benefits of the plant as avoiding 500,000 tonnes of waste going to landfill or incineration:



117. The website also states that:

*"Our proposed plant will take hundreds of thousands of tonnes per year of **household and office waste (including hard-to-recycle plastics)**, left over after recycling, and convert them into cleaner burning, sustainable fuels for aviation and road use. Otherwise this waste would end up in landfill, or be **incinerated**".*

118. The Non-Technical Summary of the approved planning application for Immingham (DM/0664/19/FUL) states that the waste-to-SAF plant would:

"…treat approximately 600,000 tonnes per year of non-recyclable / difficult to recycle waste (including some plastics)".

Esso's Solent SAF project

119. The January 2024 publication of 'Advanced Fuels Fund (AFF) competition winners' awarded the project £6m and states:

"Based in the Solent, the project is conducting a feasibility study into a commercial scale plant that uses gasification and methanol-to-jet technology to convert non-recyclable waste into SAF. The plant is expected to be operational in 2030 and produce 179 kt/y of SAF when at full operational capacity".

120. We have not been able to identify a waste feedstock requirement, and so have used the average requirement input per tonne of output from the three projects where the ratio is known to estimate the feedstock requirement of 1.7mtpa. This could also be expressed as a range of a requirement between 1.44mtpa and 2.39mtpa if one takes the lowest and highest feedstock-to-output ratios.

121. On the 10th of May 2023 Velocys published an 'Altalto Immingham Project Update'. The announcement states that:

"…further to the award of the grant from the UK Government's Department for Transport ("DfT") Advanced Fuel Funds of up to £27 million for the Altalto Immingham Sustainable Aviation Fuel ("SAF") Project, announced on 12 December 2022, Altalto Ltd…has completed the work necessary to claim the first tranche (£7 million) of the grant up to 31 March 2023. In addition, as planned, the project has obtained the first tranche of private funding for the period from 1 April 2023 from its existing private sector participants".

Other considerations

122. The analysis set out above is focused primarily on the sort of material typically used as incinerator feedstock.

123. However, to the extent that additional waste types are to be considered as part of the residual waste stream that is potentially available for incineration, it is also necessary to take account of the various alternative residual waste treatment options available for that material.

124. For example, if significant quantities of biomass, e.g. waste wood, are scoped into the figures for potential incinerator feedstock then account should also be made of the capacity available at dedicated biomass facilities to treat this waste type.

125. Additionally, for waste material such as sewerage sludge, account needs to be taken of sewerage sludge treatment capacity, as well as recognising the fact that sewerage sludge is unlikely to be treatable at conventional waste incinerators.

126. It is also worth noting that some waste types sent to landfill are wholly or largely not combustible and/or are not otherwise unsuitable for municipal waste incineration, e.g. soils.

127. As such, it is not methodologically sound to describe all waste types sent to landfill as providing potential incinerator feedstock.

128. Finally, as noted above, when considering potential incinerator feedstock it is also necessary to consider whether or not that material could be reduced, reused, repaired, or recycled / composted.

APPENDIX B: ASSUMPTIONS AND LIMITATIONS ACKNOWLEDGED IN THE CAPACITY NOTE

130. Appendix B of Defra's 30th December 2024 Capacity Note is entitled 'Assumptions and limitations', and this Appendix states that:

"*There are a number of limitations that have been identified and should be taken into account when viewing these results".*

The future policies within scope of the analysis are the packaging reforms

131. Defra states in their Capacity Note that:

"*There are other proposed policies and external forces that may affect the volume, composition, and treatment of residual waste over time that have not been accounted for within this analysis*.

"For example, the Plastic Packaging Tax, intended expansion of the UK Emissions Trading Scheme to include waste incineration and EfW, the near elimination of biodegradable waste to landfill, the introduction of mandatory waste tracking or the transition to a circular economy".

132. Given that the policies considered by Defra only take us around halfway towards achieving the statutory residual waste reduction target, taken as a whole, these acknowledged limitations are likely to understate the level of incineration overcapacity.

133. It should be noted that the Government's May 2023 Call for Evidence to support the near elimination of biodegradable waste to landfill does not include any questions about measures explicitly intended to require more biodegradable waste to be sent for incineration.

134. Instead, questions 37 and 38 discuss measures to limit raw waste going to either landfill or incineration, asking:

*"Q37. Are you aware of any barriers to expanding the list of separately collected wastes that are prohibited from disposal at landfill (or **incineration**) without some form of treatment process to include wood, card, textiles, food, and garden waste?";* and

*"Q38. In addition to the materials detailed in Q37, are there any other potentially recyclable wastes which, when separately collected, could be prohibited from being sent to landfill (or **incineration**) without some form of treatment process?".*

135. Similarly, the consultation document discussed measures such as requiring businesses to present textile waste separately for collection.

136. The Government's consultation document states that the near elimination of biodegradable waste to landfill will:

"…help deliver the recommendation of the Climate Change Committee (CCC) that the landfilling of biodegradable waste is discontinued as part of the net zero pathway for waste for Carbon Budget 6".

137. In this regard, it should be noted that the Climate Change Committee (CCC), in their policies for the Sixth Carbon Budget and Net Zero report, stated that: *"Banning biodegradable waste from landfill…should be achieved via prevention, reuse and recycling, not via more energy-from-waste"* (page 185) and that: *"An expansion in Scottish EfW capacity occurred ahead of their original 2021 biodegradable municipal waste ban date, and a repeat of this should be avoided (across the UK), due to the risk of locking-in increased EfW fossil emissions"* (page 186).

138. It appears that the UK Government will primarily be trying to eliminate biodegradable waste from landfill through measures to promote the top tiers of the waste hierarchy (as per the text that precedes Question 20, on page 17 of the call for evidence document), and that this is more likely to reduce the quantity of waste requiring incineration or landfill, rather than encouraging waste to be sent directly for incineration.

Assumption that residual municipal waste composition will not change

139. Defra states in their December 2024 Capacity Note that:

"If residual municipal waste composition changes significantly in future as a result of government policy interventions in the waste sector, this may affect the calorific value of the residual waste requiring treatment and, consequently, on the effective operational capacity of existing facility".

140. This is explored in further detail in section 5.3 of the Capacity Note, entitled 'Composition of residual waste and calorific value', which includes statements:

"As well as changes in the total tonnage, the packaging reform the forthcoming expansion of the UK Emissions Trading Scheme to include fossil carbon emissions from waste incineration and EfW, may lead to changes in the composition of municipal residual waste. In particular, through ***removing or incentivising the removal of greater quantities of plastics from the residual waste stream, such as through the separate collection of plastic films****.*

"This may affect the calorific value of residual waste, which is a measure of how much energy is available per tonne of waste.

"The higher the calorific value, the more energy can potentially be captured from the waste. Different waste components have different individual calorific values for example, food waste tends to have a relatively low value due to its high moisture content, while plastic has a much higher one. Differing proportions of these will therefore change the overall calorific value.

"The volume of waste that may be processed through an EfW facility is partly determined by the calorific value of the waste combusted. In simple terms, should calorific value increase, the facility may have to process less waste to moderate combustion temperatures, should calorific value decrease, the facility may be able to process more waste within operational thermal parameters...

"These considerations are not part of the analysis undertaken in this note…

"Regardless, this is an important consideration and energy recovery processes, including those planning for new or replacement facilities, need to ensure that their requirements do not act as a brake, or hindrance to improved recycling, or risk being unviable due to changes in calorific value".

141. As such, it can be anticipated that some plastic will be removed from the residual waste stream due to Simpler Recycling, the Packaging Reforms, and the inclusion of incineration in the UK ETS.

142. It can also be assumed that some food waste will be removed from the residual waste stream due to mandatory separate collection of food waste.

143. UKWIN's September 2023 analysis identified this issue and noted that:

"Assuming 90% of plastic film and dense plastics are removed from the feedstock, and that 50% of putrescible waste is also removed it would take around 21% more waste by weight to deliver the same calorific value".

144. If the Government's assessment had assumed 21% more effective capacity from the currently operational capacity, then this would increase the Table 3 figure for operational capacity from 14.3 Mtpa to around 17.3 Mtpa (i.e. an increase of 3 million tonnes).

145. This suggests that the issue of incineration overcapacity could be far higher than set out within the Defra modelling.

Assumption that new energy recovery capacity would only be built if there is sufficient feedstock

146. Table 6 of Defra's Capacity Note states the assumption that:

"Currently consented (as of October 2024) energy recovery capacity will not come online if existing operational capacity plus new capacity exceeds available residual waste".

147. In the 'associated uncertainty' column Defra acknowledges that:

"If, in practice, there are not considerable barriers to consented capacity plants being built where these exceed available tonnages of residual waste, there is a risk that we may misestimate future energy recovery capacity".

148. In this case 'misestimate' appears to be a synonym for 'underestimate'.

149. So long as an investor believes that feedstock can be secured, they will likely proceed with a scheme even if it results in other energy recovery plants not having enough genuinely residual waste to burn, and prospective investors can sometimes be overly optimistic in their assumptions about future feedstock availability.

150. John Ahern, when he was a Business Development Director for the UK at EfW operator Indaver, commented on the 23rd of March 2023 to EWBS's Burning Issue podcast (from around 13 minutes 15 seconds into the audio) that*:*

"…I think if you just leave it up to the market to decide when enough is enough – [then that is] probably not the way to go. Markets can be irrational longer than you can stay solvent".

151. Adrian Judge, who is a Director at waste consultancy Tolvik, has raised concerns about the value of some EfW incineration market due diligence reports into waste feedstock availability that his consultancy has been asked to undertake.

152. In August 2020 Mr Judge commented in an opinion piece for Letsrecycle entitled ''Understanding the risk of EfW overcapacity' that:

"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?

"…At the end of the day, of course, such a decision is a developer's risk. But…, when repeated across multiple projects, [this approach to due diligence] is starting to lead us to question whether the risk of EfW over-capacity is as low as we had previously assumed".

153. Mr Judge is not alone is raising such concerns. Dr Colin Church is the Chief Executive of the Institute of Materials, Minerals and Mining (IOM3), and former CEO of the Chartered Institution of Wastes Management (CIWM), the professional body for resources and waste management.

154. Dr Church was the senior waste industry figure brought in by the Scottish Government to head up the independent review of the role of incineration in the waste hierarchy in Scotland.

155. Speaking about what he learned from his Scottish incineration review, Dr Church commented on the UK industry more generally, articulating concerns about due diligence regarding UK EfW feedstock availability.

156. Dr Church stated in February 2023 in an EWB podcast that:

"…I hear stories from waste consultants who do waste assessments for the people who are trying to get investors on board. And increasingly, I'm hearing, I'm going to simplify and paraphrase, but basically stories that amount to those consultants being told, "well, actually, do you think you could enlarge the hinterland a bit? Do you think you could include more types of waste" because the numbers they're coming up with aren't quite high enough.

"That's OK once or twice, maybe. But if they're all having to do that to make their numbers stack up, then you are building up a potential problem for investors in Energy from Waste…"

157. As such, it is clear that even prominent figures within the waste industry are clear that there are dangers of assuming that the market will only build capacity if there is a genuine demand for that capacity.

158. It is also significant that Defra's Capacity Note states that:

"…companies are generally able to provide guaranteed minimum tonnages of approximately 15 years to developers who then raise the finance for the plant".

159. Even if a plant had 100% feedstock secured for its first 15 years, given that plants can last for 30+ years this means that a project could go ahead that would not have feedstock contracts in place for more than half of the project's anticipated operational lifetime.

160. According to a subsequent clarification from Defra, some merchant projects might only have around half of their feedstock secured prior to project funding with the rest of the capacity obtained via additional contracts or allocated to the spot market.

161. As the later years of the operational life for new waste incineration plants coincide with the period when the Government's residual waste reduction measures should have greatest effect, this raises concerns about the impact of new incineration capacity on the achievement of recycling and residual waste reduction targets even when contracts for the initial years of operation are in place prior to construction.

162. Additionally, were even a small proportion of the 9.5 Mt of consented energy from waste capacity mentioned in Table 3 of Defra's Capacity Note were to be built out, i.e. just a handful of the 35 English incinerators that have already secured planning permission, this could significantly increase the level of incineration overcapacity.

163. Concerns about new EfW incineration projects being built without a genuine demand have also been recently expressed by those within the waste incineration industry.

164. Responding to the Capacity Note, MRW's Daniel Bosley cited Stuart Hayward-Higham, Chief Technical Development and Innovation Officer for Suez Recycling and Recovery UK (who has recently been appointed as a member of the Government's new Circular Economy Taskforce alongside Dr Colin Church) as explaining that Defra's comments on market self-stabilisation in the Capacity Note 'needed a closer look'.

165. Hayward-Higham is quoted as explaining:

"Several EfW projects have reached financial close, with only a proportion of their feedstock contracted – but no feedstock doesn't necessarily mean no finance…a facility commissioned in 2030 will still be accepting waste in 2055. Even allowing for population growth, the proposals could result in excess treatment capacity for more than half of the operational life of a facility opening in 2030".