Comments on any further information requested by the ExA and received to D7

UKWIN'S D8 RESPONSE TO REP7-032

REP7-032: 9.29 APPLICANT'S RESPONSES TO EXAS EXQ2, SUBMISSIONS RECEIVED AT DEADLINE 6 AND FURTHER INFORMATION

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

APRIL 2023

United Kingdom Without Incineration Network

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UKWIN'S RESPONSE TO APPLICANTS' COMMENTS ON UKWIN'S WRITTEN QUESTION RESPONSES AND DEADLINE 6 RESPONSES

1. This submission comments on the Applicant's REP7-032 statements but because many of the issues have already been argued extensively UKWIN has been selective in providing further comments.

PROJECTIONS OF WASTE ARISING (REP6-042 PARAS 6-40)

Municipal waste under EIP Interim Target 3

2. At the first bullet of section 6.4 REP7-032 the Applicant states: **"In REP6-042 UKWIN argues (in REP6-042 paragraphs 17-20) that EIP Interim Target 3 applies to a definition of municipal residual waste which includes C&I waste of similar composition to local authority collected waste. The Applicant agrees that there is a lack of clarity here, as the precise way in which the Government derived this target is not in the public domain so far as we are aware. Hence it is not possible to completely reconcile the Applicant's analysis to the Government's".**
3. The Applicant curiously refers to agreeing with UKWIN there is a lack of clarity from the Government. For the avoidance of doubt, UKWIN's case was never that there was a lack of clarity on the part of the Government.
4. UKWIN's case set out in REP6-042 paragraphs 17-20 was that the Applicant had misunderstood the target and mistakenly adopted an overly narrow definition of municipal waste because the Applicant incorrectly equated municipal waste with Local Authority Collected Waste.
5. UKWIN's position was, and remains, that the issue of concern is solely due to the Applicant's failure to read or appreciate the clarity provided within the EIP.
6. The Applicant's aforementioned statement that UKWIN "argues" that "EIP Interim Target 3 applies to a definition of municipal residual waste which includes C&I waste of similar composition to local authority collected waste" is similarly mistaken.
7. UKWIN does not merely "argue" that the target applies to municipal residual waste which includes C&I waste of similar composition to household waste, we point this out as a fact, citing the supporting text on page 148 of the Environmental Improvement Plan (EIP) that explicitly states: "Interim target 3 covers the narrower scope of municipal waste. <u>This is waste from households plus waste similar in composition to household waste, such as commercial waste</u>". **(**<u>emphasis added</u>**).**

8. It can be confirmed that this is a fact rather than an ‘argument’ by simply reading internal page 148 of the EIP which UKWIN submitted as REP6-045.

9. The Applicant’s aforementioned REP7-032 section 6.4 first bullet observations included a statement that: **“the precise way in which the Government derived this target is not in the public domain so far as we are aware. Hence it is not possible to completely reconcile the Applicant’s analysis to the Government’s”**.

10. In REP6-043 UKWIN did not use either the municipal waste target or the residual waste target as the starting point for the relevant waste arisings, but instead, as agreed at ISH3 which took place in January 2023, used the Applicant’s assessment figure of 22 million tonnes.

11. It is understood that this 22 million tonne figure was based on the Applicant’s view of the relevant portion of the waste stream for 2020.

12. For estimating post-2020 waste arisings UKWIN then took into account how the Applicant’s 22 million tonne figure would rise to 23.7Mt if waste exported as RDF were included.

13. UKWIN’s REP6-043 assessment then assumed that the waste in 2027 would be the 23.7Mt reduced by 29% per capita in line with the municipal waste reduction trend, based on the overlap between the what the Applicant considered to constitute ‘waste available as fuel’ and the material that the UK Government considers to constitute ‘municipal waste’ for the purpose of the 29% reduction target.

14. This means that UKWIN’s REP6-043 approach sidestepped the issues of precisely what is meant by ‘municipal waste’ by only using the EIP’s 2019 and 2027 municipal waste levels as the basis for the trend, and not as the basis for the precise quantity of waste that would be available as fuel.

15. As such, the Applicant’s arguments in this instance simultaneously cast doubt on the reliability of the Applicant’s analysis while supporting the approach adopted by UKWIN in REP6-043.

16. The evidence shows the proposed capacity at North Lincolnshire would exacerbate incineration overcapacity, and therefore the proposed development represents a threat to the achievement of the Government’s target to reduce municipal residual waste by 29% per capita by 2027 set out in EIP Interim Target 3, and a threat to the Government’s target to halve residual waste per capita by 2042.

17. This conclusion remains true, irrespective of the precise definition of ‘municipal waste’ within the EIP.

UKWIN's historic 90% scaling factor

18. At the second bullet of REP7-032 section 6.4 the Applicant includes the statement that: **"In REP5-037 the Applicant applied a '90% scaling factor' when comparing its estimate of total residual waste arising against Government targets. This assumption was derived from UKWIN's evidence at ISH3, based on its (the Applicant's) understanding that this represents the difference between all residual waste and residual waste suitable for use as a fuel.**

    This compares to the Applicant's own estimate of total residual waste as a fuel arising in 2020 of 22mte of residual fuel treated in England plus 1.7mte of exports, suggesting that the Applicant's estimation is lower than the Government's".

19. The Applicant's approach was presumably not to estimate all municipal waste, but to estimate waste relevant to their RDF fuel availability assessment. As such, the fact that the Applicant arrived at a lower figure than the Government's wider figure for total municipal waste does not suggest that the Applicant under-estimated waste available as a fuel.

20. The wider the definition of waste, the greater consideration that has to be given to the suitability of that waste for potential use as incinerator feedstock. As such, if one were to start with the historic rate for all municipal waste then the end result would be similar because one would then just have to remove that waste to account for that waste that fell within the wider definition that proved to be unsuitable for incineration.

21. At the second bullet of REP7-032 section 6.4 the Applicant includes the statement that: **"The Applicant acknowledges that it has misinterpreted this figure. On reviewing REP2-111, the 90% assumption appears to be UKWIN's assumption for the amount of material removed from the residual waste stream for other purposes such as use in cement kilns. As the Applicant has already accounted for this in separate assumptions it is not appropriate to apply the 90% factor, and the Applicant notes that UKWIN does not use it in REP3-043".**

22. The Applicant continues to misinterpret UKWIN's historic evidence.

23. REP3-043 did not include any figures for estimating feedstock, so it is curious why the Applicant thinks that submission ought to have included mention of a 90% scaling factor.

24. As noted on paragraph 4 of REP2-111, the 90% scaling factor set out in REP2-111 did not simply take into account historic use of cement kilns, but also other factors, e.g. "material such as oversized objects and small 'fines' like grit and gravel that are not generally compatible with moving grate incinerator".

25. The Applicant cannot therefore imply that using 100% of municipal waste as the basis for of their calculation would be consistent with UKWIN's REP2-111 approach if only the Applicant accounts for historic cement kiln use.

26. In any case, as set out on page 6 of REP2-111, UKWIN's historic was "more likely to underestimate than to overestimate actual capacity relative to the falls of waste arisings anticipated as England moves to halve residual waste by 2042".

27. The second bullet of REP7-032 section 6.4 concludes with the Applicant stating that: **"Hence the 'starting point' for residual municipal waste should be around 26.4mte rather than 23.7mte".**

28. The relevant consideration here is whether the approach to estimating the level of future waste available as a fuel is consistent with the UK Government's recycling and residual waste reduction targets.

29. As such, it is important to consider not how much municipal waste there will be, but how much waste would be available for use as a fuel.

30. As previously noted, the Applicant already provided an estimate for the starting point for that analysis of 22Mt which rises to 23.7Mt once RDF export is taken into account.

31. There is no reason to deviate further from the agreed 22Mt figure.

32. In line with the approach taken by UKWIN in REP6-043, this is handled in an appropriate manner by UKWIN.

33. As such, UKWIN remains confident that our estimate of waste as a fuel is appropriate and that the Applicant is overstating future waste available as a fuel.

34. UKWIN's REP6-043 did not include some operational EfW capacity at Hull (in the Yorkshire & Humber region) and Boston (in the East Midlands region) which was historically used exclusively for biomass (waste wood) but which now treat exclusively RDF/SRF.

35. As such, the anticipated regional/national situation is slightly worse than UKWIN set out in REP6-043.

Inclusion of C&I waste in municipal residual waste

36. At the third bullet of REP7-032 section 6.4 the Applicant states that: **"Furthermore, the Applicant does not accept that all C&I waste which is a potential fuel would fall under the category of municipal residual waste. Whilst it is unclear exactly which waste codes have been used to set Interim Target 3, analysis of Waste Data Interrogator data for 2020 shows that EfW facilities have accepted waste categorised under the waste codes other than those normally used for household waste and similar C&I waste (such as 20 03 01 and 19 12 12)".**

37. As set out above, this issue is side-stepped by UKWIN's reliance upon the Applicant's 22Mt / 23.7Mt as a starting point and then assuming that this waste would halve by 2042 (and fall by 29% per person in line with the municipal residual waste target for 2027).

38. Even if there is not a 100% overlap between municipal waste and the feedstock, the vast majority of the relevant waste stream is municipal waste, and so if the municipal residual waste reduction target is to be met then incinerator feedstock will need to fall in general accordance with the relevant targets.

39. As noted on internal page 148 of the EIP [REP6-045], the Government proposed the 29% municipal reduction target "because it captures where current policy interventions, the Collection and Packaging Reforms, are focused".

40. That is very much in line with the UK Government's expectation that such measures would be targeting waste going to incineration for diversion to be managed at the higher tiers of the waste hierarchy.

41. As UKWIN set out in REP2-110 paragraph 72, and noted further in REP6-043 paragraph 19, the Government has been explicit about how their measures to reduce residual waste are intended to greatly reduce the amount of waste that is incinerated, and so the model assumes that waste available as fuel would reduce in line with this ambition to allow for the municipal residual waste reduction target to be met.

42. This chimes in with Government statements such as the February 2020 Defra statement – referred to in both REP2-110 and REP6-043 – that: "…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".

43. Assuming that the 22Mt / 23.7Mt starting quantities progressively fall in line with the Government's municipal waste reduction targets reflects the Government's intended "paradigm shift" in moving away from the amount of waste incinerated.

44. As such, the Applicant's comments appear to support UKWIN's approach and the use of the agreed 22Mt /23.7Mt starting point for the assessment, rather than re-basing the starting point using a wholly new figure which is inconsistent with the scope of the waste stream that was used as the basis of the Applicant's RDF Supply Assessment.

Use of residual waste (EIP Target 1)

45. At the fourth bullet of REP7-032 section 6.4 the Applicant states that: **"EIP Interim Target 1 relates to all residual waste excluding major mineral wastes. The 2019 baseline for this target is 0.576te/capita, implying around 32.4mte of residual waste excluding major mineral waste. The exclusion of major mineral wastes is intended to exclude inert construction, demolition, and excavation wastes, implying that the remaining waste fraction is likely to be combustible. The Applicant recognises that not all of this waste will be suitable for use as a fuel for EfW, but the information needed to quantify this precisely is not available".**

46. In addition to major mineral wastes there is a significant fraction of other residual waste that might not be combustible or appropriate for moving grate incineration.

47. The uncertainty about the precise quantity of combustible/suitable residual waste covered by the Interim Target 1 figure supports adopting the approach followed by UKWIN in REP6-043 which is to adopt an approach using the 22Mt / 23.7Mt starting point and then to assume waste falls in line with the reductions expected by Interim Target 3 and the 2042 target.

48. All sectors need to do their bit to support the achievement of EIP Interim Target 1, including the EfW sector.

49. As the evidence shows that following a REP6-043 approach indicates that the plant would exacerbate incineration overcapacity, allowing the proposed capacity at North Lincolnshire represents a genuine threat to the achievement of EIP Interim Target 1.

SUSTAINABLE AVIATION FUEL (SAF) (REP6-042 PARAS 41-48)

50. At Paragraph 6.5 of REP7-032 the Applicant states: **"The Applicant's comments on SAF as set out in REP6-042. All SAF projects are in early stages of development and there remains a high degree of uncertainty as to which, if any will come forward. The Applicant has included in its analysis the new project which has planning consent".**

51. The UK Government recognises and is actively engaged in addressing a range of uncertainties associated with waste-to-SAF projects, and including waste-to-SAF feedstock requirements in any assessment of waste fuel available for non-SAF purposes is in line with such efforts.

52. By creating or exacerbating incineration overcapacity at regional and/or national levels, the proposed North Lincolnshire plant could be creating or exacerbating barriers and uncertainties that could threaten the viability of waste-to-SAF projects, despite the importance of waste-to-SAF within the context of the Government's Jet Zero ambitions.

53. As set out at paragraph 2.9 of the UK Government's 17th April 2023 Response to the independent report on Developing a UK Sustainable Aviation Fuel Industry: "…a key determinant in the effective supply of low carbon fuels, such as SAF, is the availability of sufficient quantities of suitable feedstocks to produce them. Availability is limited by competition for feedstocks across the wider energy and transport sector".

54. This comments on the independent report published alongside the Department for Transport's response, and presumably responds to the statement on page 9 of that independent report that: "...some of the resources that SAF could use have an alternative application that is incremental to and (if unabated) higher carbon than other technologies (for example waste incineration to generate electricity) but have scarcity value as feedstocks in hard to decarbonise sectors..." and the statement on page 25 of the report that: "Waste and other biogenic feedstocks should be prioritised [for use as waste-to-SAF feedstock] to address the challenges of the hardest to abate sectors".

55. Thus, both the Government and the associated independent report highlight how the availability of waste feedstock is a concern with respect to the development of the UK's waste-to-SAF sector.

56. The Applicant's suggested approach of assuming that no waste-to-SAF projects that have not already secured planning consent will come forward (even those in receipt of Government funding) and that no space should be afforded such projects within the assessment of waste fuel availability is simply out of step with current Government thinking on this matter.

CCS POTENTIAL

57. Paragraph 6.9 of REP7-032 **quotes paragraph 3.7.29 of the March 2023 version of EN-3 as stating that "Applicants must ensure EfW plants are fit for the future…"** (Applicant's emphasis)

58. This is a far cry from the Government stating that existing incinerators without CCS are likely to close down in the foreseeable future.

59. UKWIN maintains its position that all existing capacity ought to be included in the consideration of waste fuel availability.

60. UKWIN also maintains its position that there is a significant difference between being *within* a CCS cluster and simply being *near* to such a cluster.

61. With respect to the East Coast Cluster in particular, UKWIN notes that on 30th March 2023 the Government issued a notice regarding the official "Cluster sequencing Phase-2: Track-1 project negotiation list".

62. The Department of Energy Security and Net Zero listed all three successful East Coast Cluster projects, and these were limited to Net Zero Teesside Power, bpH2 Teeside, and Teesside Hydrogen CO2 Capture.

63. Despite having applied for Government support, the North Lincolnshire Green Energy Park failed to make the list.

64. At paragraph 6.13 of REP7-032 the Applicant states: **"In paragraph 50 of REP6-042, UKWIN argues that it is not valid to take into account likely future policy and that only current policy should be taken into account. This appears to contradict its position that draft EN3 planning guidance relating to over-capacity should be considered".**

65. That is not what UKWIN argued.

66. UKWIN stated that the Applicant's position on CCS closures related to "…what they [the Applicant] think Government policy might be in the future, or what might arise in response to future Government policy, rather than an actual expression of current UK Government policy".

67. The Applicant's position on CCS pivoted from arguing that the Government would shut non-CCS incineration plants to arguing that some operators would voluntarily close non-CCS plants for commercial reasons.

68. The Applicant has not demonstrated that "likely future policy" would result in the widespread closure of currently operating EfW plants either as a result of mandatory or of voluntary closures.

69. As with non-R1 incineration plants, even if a small number of plants close down for commercial reasons this does not impact on UKWIN's analysis because UKWIN underestimates EfW capacity from plants which are consented but have yet to enter construction and from plants which have (or will) convert from treating biomass to RDF/SRF. This is explored in more detail below with respect to R1 plants, but the logic applies more broadly.

70. The Applicant is also wrong to characterise the Government's policy on avoiding overcapacity as speculative, because it is current Government policy, not "likely future policy".

71. As set out on paragraph 6 of UKWIN's Written Representation [REP2-110], on the 11th of July 2022 Defra explained how avoiding incineration overcapacity was current (and not proposed) Government policy when Defra replied in a Parliamentary answer that: "The Government's view is that Energy from Waste (EfW) should not compete with greater waste prevention, re-use, or recycling. Proposed new plants must not result in an over-capacity of EfW waste treatment provision at a local or national level".

72. The fact that the UK Government is proposing to explicitly include policy wording on the need to avoid incineration overcapacity within their National Policy Statements is of significance, even though this is not new Government policy.

73. The March 2023 updates to EN-1 and EN-3 and their significance is discussed in UKWIN's response to ExQ3.

NON-R1 CAPACITY AND OTHER COMMERCIAL POINTS (REP6-042 PARAS 53-78)

74. At Paragraph 6.9 of REP7-032 the Applicant states: **"6.14 …UKWIN has not presented any evidence to support its speculation that the few remaining non-R1 facilities plan to 'upgrade' to R1, or are even capable of doing so".**

75. The Applicant has provided no evidence that non-R1 incineration plants will be required to become R1, nor that there are any operational incinerators that would be unable to operate as R1.

76. As such, the UKWIN saw no need to provide evidence on the potential for non-R1 plants to achieve R1 status.

77. Even in the event that a few older incinerators do close in the coming years, the loss of their capacity is likely to be outweighed by additional consented capacity that is not currently under construction coming forward (e.g. some or all of the 9 million tonnes of consented capacity still under active development listed by the Applicant in Table 8 and page 9 of REP4-020).

78. 4.5 million tonnes of that 9 million tonnes of consented capacity still under active development coming forward would be in line with the Applicant's REP4-020 evidence combined with the Applicant's evidence set out on electronic page 134 of AP3-022 that: "Analysis of historic planning data suggest that approximately 50% of consented capacity is realised".

79. Furthermore, as noted above, UKWIN's analysis does not account for any waste wood biomass plants converting to RDF / SRF feedstock, which has already happened in Boston and Hull and which is proposed for 330,000 tonnes of capacity at Port Clarence located in Stockton-on-Tees (where the operator has applied to the Environment Agency for the associated permit variation to enable the conversion).

80. That said, UKWIN is happy to provide below two ready examples from Coventry and Nottingham of non-R1 facilities with an acknowledged potential to become certified as R1 compliant in the future in response to the Applicant's stated desire for such evidence.

Coventry

81. The Applicant assumes that the Coventry incinerator will cease operations in 2025.

82. According to the operator Coventry and Solihull Waste Disposal Company's (CSWDC's) 'Environment, Health and Safety Review for the year to 31st December 2021': "There is an ongoing steer from the Environment Agency to achieve R1 status. CSWDC is working with technical specialists Ramboll to achieve this. The ambition in 2022/23 is to continue working with Ramboll...If requirements are met then Ramboll will carry out further modelling work with the intention of submitting an application to the Environment Agency in 2023/24. If successful, this will result in the plant being classified as recovery rather than disposal".

83. This statement from the operators of the Coventry incinerator provides no indication that R1 is unlikely to be achievable at the Coventry site, and instead shows that CSWDC is investing money to secure R1 certification in the future.

Eastcroft EfW plant

84. The Applicant assumes Eastcroft will cease operations in 2033.

85. The Eastcroft incinerator is currently connected to an expansive district heating scheme which means that it should be easy for that incinerator to meet the R1 threshold, especially as it might only have to meet the 0.60 threshold to be classified as R1.

86. The Planning Committee report for the extension and refurbishment of the Eastcroft EfW from January 2016 quotes Nottinghamshire County Council's position that (15/02548/PMFUL3 for planning permission. Planning Committee. 20 2016) "For the purpose of reaching a planning decision, [the Council] concludes that the evidence provides a clear indication that the efficiency of the plant would satisfy the requirements of R1 status and as such the plant should be considered as a recovery facility".

87. Paragraph 7.9 of the Committee Report produced by Nottingham City Council agreed with their County colleagues, stating that: "…Information submitted as part of the application appears to demonstrate that the facility could attain R1 status should a permit be applied for as the plant would be seen as a 'recovery' facility rather than 'disposal' thereby moving the residual municipal waste up the waste hierarchy. In response to the concerns raised through consultation, a condition is recommended to ensure that the detailed design of the plant will achieve R1 status before the third line is brought into use".

88. As a result, Condition 15 stated: "…prior to the new third line hereby permitted being brought into use the applicant shall submit to the Local Planning Authority verification that the Energy from Waste facility has achieved Stage 1 (design information) R1 status from the Environment Agency…"

89. Given that the Eastcroft operator (FCC) did not dispute that condition, it is clear that they believed it was possible to secure R1 status for a refurbished Eastcroft incinerator.

Requirement 15 and use of RDF

90. At Paragraph 6.18 of REP7-032 the Applicant states: "…**The ERF at NLGEP will only be able to take Refuse Derived Fuel (RDF), and compliance with the waste hierarchy is secured by requirement 15 in the draft DCO and will be addressed in the environmental permit too [REP5-006]. Therefore, the Project will not impact on the UK's ability to meet recycling targets…"**

91. While Requirement 15 would limit the feedstock to RDF it would not secure "compliance with the waste hierarchy".

92. As UKWIN noted in REP3-043 in response to ExQ1 question Q7.1.41, even if the North Lincolnshire plant were restricted to accepting only waste with the 19 12 10 EWC code, this would not guarantee the plant would not adversely impact on recycling.

93. As set out in UKWIN's evidence, including our Written Representation [REP2-110], RDF can contain recyclable material and incineration overcapacity can harm recycling.

94. As UKWIN noted at paragraph 28 of REP2-110, the proposed capacity would impact on a market that already includes a significant quantity of incineration capacity. This means that even if the North Lincolnshire facility were to limit itself to processing feedstock that is 100% genuinely non-recyclable combustible material, over the lifetime of the facility a significant proportion of that feedstock would consist of material that would otherwise have been used to keep a different existing incinerator supplied with feedstock.

95. Thus, the operation of a new incinerator in North Lincolnshire would require existing incinerators to look further afield for their feedstock, and this could result in a lowering of standards (i.e. increasing the incineration of recyclable and compostable material), as well as increased travel distances.

96. The potential for EfW overcapacity to harm the top tiers of the waste hierarchy is further discussed in UKWIN's response to ExQ3.

GREENHOUSE GAS POINTS (REP6-042 PARAS 79-99)

Metal recovery

97. At Paragraph 6.21 of REP7-032 the Applicant states: **"Referring to paras 80-81** [of UKWIN's REP6-042]**, the Applicant's assessment of the contribution of metal recovery in APP-054 is clear and robust, based on the proportion of metals in the mixed waste fuel that it will receive and that proportion which is recoverable from bottom ash. It is not for the Applicant to speculate about the fuel supply chain, processing and recovery technologies associated with another operator's facility".**

98. UKWIN has provided unrebutted evidence that the Applicant's assessment of the contribution of metal recovery in APP-054 cannot reasonably be considered robust given that its internally inconsistent rationale is nothing more than a flimsy assumption regarding the quantities of ferrous and non-ferrous metal will be in the RDF once it has been processed from 'raw' waste.

99. The Applicant's APP-054 claim is unsupported by a clear evidence base, and their assumptions are contradicted by real world evidence (drawing on data from Ferrybridge, in REP1-027), statements made elsewhere in the Applicant's supporting documents (e.g. in REP2-017 and REP3-040), and the economic realities of metals recovery (as reflected in REP2-107).

100. While the Applicant states that "It is not for the Applicant to speculate about the fuel supply chain, processing and recovery technologies associated with another operator's facility", the Applicant's APP-054 and REP1-015 was based on just such speculation.

101. Their assumptions about how much metal and what type of metal would remain in the feedstock to be subsequently recovered at the North Lincolnshire plant, entailed speculation by the Applicant regarding their feedstock suppliers and what would be in that supply.

102. If the Applicant does not believe it appropriate to speculate on what metals might be recovered from the waste that they propose to incinerate in North Lincolnshire, then they should not claim any benefit with respect to metal recovery.

103. If the Applicant wishes to claim benefit from metal recovery, then the Applicant would need to have justified that this claimed carbon benefit is likely to be realised.

104. When assessing whether or not such claims are reasonable, there is no justification for ignoring real world examples of similar facilities, as can be useful in showing what is currently happening thereby providing valuable information about the RDF feedstock market.

105. The Applicant's reluctance to consider real world data is not reassuring, especially when they are refusing to give due consideration to real world data which is not in their favour, and which calls into question the reasonableness of their assumptions.

106. Rather than avoiding speculation, the Applicant in fact both claims and overstates the likely benefits from metal recovery.

107. The Applicant's REP1-015 includes Table 4 which sets out the Applicant's "manipulation of overall composition of RDF" with respect to ferrous and non-ferrous metal as follows overleaf:

Table 4 Manipulation of overall composition of RDF

Waste Fraction	Residual household and residual C&I waste on a 50:50 basis	Proportion carried over into RDF	Adjustment made to base composition, as calculated	Percentage contribution of RDF composition
Paper and card	23.4%	95%	22.230%	40.0%
Plastic film	9.8%	66%	6.435%	11.6%
Dense plastic	9.6%	66%	6.336%	11.4%
Textiles	4.4%	66%	2.904%	5.2%
Absorbent hygiene products	2.4%	95%	2.234%	4.0%
Wood	3.7%	95%	3.527%	6.4%
Combustibles	7.3%	95%	6.957%	12.5%
Non-combustibles	4.4%	5%	0.221%	0.4%
Glass	2.2%	5%	0.110%	0.2%
Organic	25.0%	15.0%	3.743%	6.7%
Ferrous metal	2.4%	12.5%	0.300%	0.5%
Non-ferrous metal	1.2%	26%	0.299%	0.5%
Fine material <10mm	2.7%	5%	0.135%	0.2%
Waste electrical and electronic equipment	1.1%	5%	0.053%	0.1%
Specific hazardous household	0.6%	5%	0.030%	0.1%

108. As such, the Applicant's climate assessment assumes that the proportion of non-ferrous metal 'carried over' into the RDF was twice that of the ferrous metal.

109. APP1-015 did not adopt a reasonable worse case assumption, nor did the Applicant avoid speculation by assuming 0% metal would be carried over on the basis that it would not be appropriate to speculate on metal recovery.

110. UKWIN provided evidence in REP1-023 and REP2-110 that, rather than assuming a high level of non-ferrous metals are carried over as the Applicant assumes, based on the evidence from Ferrybridge FM1 and FM2 and the economics of the metals market, it makes more sense that the only metals that would be carried over into the RDF feedstock to be incinerated at North Lincolnshire would be the less valuable ferrous metals.

111. The Applicant's assumed GHG benefit for ferrous metals is significantly lower than for non-ferrous metals, so UKWIN provided undisputed evidence that the impact of adopting assumptions about metal in the waste consistent with actual RDF combusted at a nearby RDF-only incinerator would be to reduce the claimed GHG benefits from metals recycling and that this would be sufficient to flip the Applicant's default scenario for the North Lincolnshire scheme from providing a GHG benefit to delivering a GHG disbenefit.

112. UKWIN also noted in REP2-110 that the quantity of metals to be recovered assumed by the Applicant in their climate assessment is higher than the quantity that the Applicant claims would be recovered in both the Applicant's Planning Statement [APP-035] and RDF Supply Assessment [REP3-040], indicating they are taking credit for too much metal as well as for the wrong type of metal.

113. UKWIN provided calculations at paragraph 192 of REP2-110 showing how even if the Applicant's assumption that 50% of the metals in the RDF would be the more valuable non-ferrous metal, in line with the Applicant's climate change assessment, the lower rate of metal recovery reflected in the Applicant's Planning Statement [APP-035/REP2-017] and RDF Supply Assessment [REP1-006/REP3-040] would similarly flip the Applicant's default scenario from providing a GHG benefit to a GHG disbenefit.

114. The Applicant has still not challenged UKWIN's numerical calculations in this regard, and so that evidence remains undisputed.

115. As UKWIN noted at paragraph REP1-023: "In the process of converting 'raw' waste to RDF, ferrous metals can be removed using magnets and non-ferrous metals can be removed using eddy currents". The Applicant has provided no evidence to explain why the quantity and type of metal recovery might be likely to significantly differ from that at Ferrybridge Multifuel facilities as set out in UKWIN's evidence and have not provided a convincing rationale for their alternative (internally inconsistent) assumptions.

116. Furthermore, despite repeated requests, the Applicant has still not provided meaningful evidence to support their assumptions with regard to the level and distribution of metal recovery is justified for an RDF-fed incinerator where valuable metals are likely to have been removed by those supplying the waste.

117. This longstanding issue continues to cast serious doubt on the Applicant's claimed metal recycling benefits and their overall claim of likely climate benefits which rely on those claims, and the longstanding nature of the Applicant's failure to provide evidence for scrutiny to support their assumptions should be seen as further evidence that the metal recovery benefit should not be given weight due to these uncertainties.

UKWIN criticism of the Applicant's further consideration of GHG benefits

118. At Paragraph 6.25 of REP7-032 the Applicant states: **"Responding to comments in para 90** [of REP6-042]**, the Applicant is content with the further consideration of the GHG benefits of the scheme that it has communicated beyond the original assessment in APP-054 in response to UKWIN's written representations in REP3-022, 9.17 pages 55-63. It notes that UKWIN does not take issue with these".**

119. The Applicant's claim that UKWIN did not take issue with the Applicant's further consideration of GHG benefits set out in pages 55-63 of REP3-022 is incorrect, as can be seen at REP4-042 paragraphs 106-187.

120. Examples of comments made by UKWIN that demonstrate UKWIN having taken issue with internal pages 55-63 of REP3-022 include the following passages from REP4-042 (with references to the new considerations within pages 55-63 of REP3-022 given added emphasis):

a) Paragraph 110: "The Applicant's new arguments are also increasingly divorced from the evidence base, and increasingly detached from the Government documents, that supposedly provided the foundation for their climate assessment."

b) Paragraph 111: "For example, after having previously advanced several assumptions on the basis that they needed little justification as they were standard industry assumptions, the Applicant now appears to be arguing that those assumptions and methodologies could be replaced by alternatives that favour their development more than their original approach."

c) Paragraph 112: "However, the Applicant fails to acknowledge that those newly introduced assumptions could just as easily, if not more so, be amended to go in the opposite direction, thereby reducing or negating the claimed climate benefit of the proposal."

d) Paragraph 114: "As such, the Applicant has made it easier rather than harder for the Examining Authority to conclude, in line with references to the Kemsley decision in REP2-110 electronic page 32 (paragraphs 128-131), that "given the uncertainties in the Applicant's assessment of carbon benefits, the matter should carry little weight in the assessment…The Secretary of State sees no reason to take different view to the ExA in this matter."

121. In response to the Applicant's request, UKWIN is happy to elaborate upon the point that "the Applicant fails to acknowledge that those newly introduced assumptions could just as easily, if not more so, be amended to go in the opposite direction, thereby reducing or negating the claimed climate benefit of the proposal".

122. The Applicant claims on internal pages 55-56 of REP3-022 that: “The Applicant has sought to undertake a reasonable worst-case approach in relation to climate change in chapter 6 of the ES [APP-054], however this has resulted in an under-estimate of the climate change benefits for a number of reasons which are summarised below”.

123. Focusing on each of the examples provided by the Applicant, UKWIN provides examples below showing how the Applicant’s original position was not a ‘reasonable worst case’.

124. This evidence shows how the Applicant’s assumptions were in many cases either simply a reasonable (rather than a ‘worst case’) assumption given the known uncertainties or an assumption which resulted in their assessment overstating their project’s claimed benefit compared to reasonable alternative assumptions or approaches that they could have taken.

125. Combined with the various other areas where the Applicant’s assumptions overstate benefits (e.g. with respect to metals recycling), it seems clear that there is a realistic prospect for adverse climate impacts arising from the North Lincolnshire proposal to be as bad, and potentially far worse, than the Applicant originally estimated in their sensitivity analysis.

126. For the purpose of this analysis, we use the term ‘conservative’ to mean ‘more likely to underestimate than to overestimate the GHG benefits of their proposal’ and the term ‘convenient’ to mean ‘more likely to overestimate the GHG benefits of their proposal compared to reasonable alternative assumptions’.

127. **The greenhouse warming potential of methane**

128. The Applicant argued that their assumption of a GWP of methane of 28 was conservative and argues that a higher figure could have been chosen.

129. However, a GWP of methane of 28 is already higher than the GWP set out in the Government’s Resources and Waste Strategy which states on internal pages 19-20 that refers to methane as "a greenhouse gas 25 times more potent than CO_2”.

130. Similarly, despite stating on internal page 55 of REP3-022 that: “The Applicant has undertaken a very conservative approach to the assessment of GHG emissions, consistent with Defra’s guidance on assessing the carbon balance of energy from waste plant (Energy recovery for residual waste. A carbon based modelling approach”, the Carbon based modelling approach document also uses the lower GWP of 25 and included in its sensitivity analysis the lower figures of 23 and 21.

131. As such, the Applicant's assumed GWP for methane from landfill of 28 could be considered convenient rather than conservative, and a lower GWP figure could be justified which would result in the modelling indicating greater increases in adverse GHG impacts from incineration compared to those reflected by their use of the GWP figure of 28.

132. We also note that the Applicant's comment on methane is based on a timeframe of 25-years, but according at paragraph 8.1.1.1 of REP6-018 ('Project Description and Alternatives') the Applicant states: the proposal will have "a 35 year design life (25 + 10)".

133. **Biogenic carbon storage in landfill**

134. For the reasons set out in UKWIN's Good Practice Guidance [REP2-109] internal pages 19-42, the Applicant was right to have credited landfill for biogenic carbon sequestration in their analysis.

135. The Applicant's approach with respect to biogenic carbon was more convenient than conservative because:

a) The Applicant's original assessment does not take into account the biogenic CO_2 that would be released through incineration, but which would not be released as CO_2 by landfill because it was being released as methane, e.g. either by including such biogenic CO_2 on the incineration side of the equation or by reducing the GWP of methane by 1 to account for this; and

b) If the landfilled waste were RDF then this would result in higher levels of biogenic carbon sequestration than those assumed by the Applicant, especially when anticipated reductions in food waste are taken into account.

136. **Methane capture**

137. At Paragraph 6.23 of REP7-032 the Applicant states**:** "In response to paras 85-88 [of REP7-032], a 68% rate for landfill gas recovery was modelled as part of the conservative worst case approach in the APP-054 assessment. In practice, the recovery rate is likely to be a substantially lower figure. Even the 55-65% envelope quoted by the Applicant in REP5-037 paragraph 2.24 3) v) would be high, given this only refers to the period of active management of the landfill. As a result, the benefits of diverting waste from landfill will be significantly greater than those reported in the worst case".

138. The Applicant refers to a 55%-65% figure, but this relates to the larger UK portfolio of landfill sites and not to modern landfill sites.

139. If the North Lincolnshire plant were displacing modern landfill, then due to improvements in landfill gas (LFG) capture technology we could expect that landfill gas capture performance to be higher than the 68% figure, which was based on a study on landfill gas capture from 2014.

140. The Climate Change Committee's Sixth Carbon Budget refers to the potential "for increased landfill methane capture and oxidation".

141. Such thinking is within the realm of consideration by other EfW applicants.

142. Page 27 of Powerfuel's Technical Annex E produced by Leapfrog for planning application WP/20/00692/DCC submitted by Powerfuel Portland Limited stated for their Portland ERF in September 2020 that: "Landfill gas capture rates are assumed to increase gradually from 68% in 2024 to 75% in 2045, as it is likely that landfill performance will improve".

143. Similarly, page 18 of Cory Riverside Energy's February 2021 Carbon Assessment for their Riverside Improvement Project NSIP application produced by Fichtner stated: "LFG recovery rates may improve as older sites are closed. We have allowed for a 0.2% improvement per year, starting at 68% in 2021 and ending at 72% in 2040".

144. Given that landfill gas capture rates of 72% by 2040 and 75% by 2045 are within the realm of consideration for other incinerator applications, in assessments carried out by two different consultants, the Applicant adopting a 68% central figure cannot be considered "very conservative".

145. Furthermore, as noted with respect to biogenic carbon storage, if what is being incinerated is RDF then it is likely to result in lower levels of methane release in landfill in any case.

146. Even lower levels of methane would be achieved if the waste were biostabilised prior to landfill, which is plausible within the lifetime of the proposed incinerator as set out on internal pages 65-79 of REP2-109.

147. While it is not certain that the waste would be biostabilised prior to landfill, as set out by UKWIN, it is unlikely that it would be landfilled at all. If not incinerated it is likely the feedstock for the North Lincolnshire plant would otherwise be reduced, re-used or recycled.

148. However, in the event that it *were* landfilled, it makes sense in line with Government policy that it would be landfilled in such a way as to minimise methane emissions, both through pre-treatment prior to landfill and through careful management of the landfill to minimise methane escape and to ensure that as much as possible of any methane which is emitted is either converted into electricity or at least flared to convert it into biogenic CO_2.

149. As such, by assuming waste would be landfilled without being subject to any additional measures to reduce methane emissions (or that it would be landfilled at all in preference to being managed at the top tiers of the waste hierarchy) the Applicant has already chosen an approach which is not even a ‘reasonable worst case’, let alone one which can be characterised as ‘very conservative’.

150. In light of the above, the evidence indicates that if any alternative LFG recovery rate were to be given further consideration it ought to be the 75% LFG capture recovery rate which would better reflect the Government’s intention to decarbonise the waste sector.

151. As noted at paragraph 8.2.2.4 of the Applicant’s Climate Assessment [APP-054], “...if the landfill gas recovery rate is 75%, there is no longer a net carbon benefit for the Project”.

152. **Supply of Heat**

153. As acknowledged by the Applicant, this is merely a ‘potential benefit’ that remains uncertain.

154. The Applicant was right not to include it in their original analysis, and no weight should be given to this speculative benefit in the planning balance.

155. The Applicant refers to ‘renewable heat’, but for the avoidance of doubt the heat would be generated through the incineration of a mix of biogenic and fossil sources, meaning the heat would be ‘partially renewable’ at best.

156. Exporting heat reduces electricity generation, as some of the hot air used to turn the turbine to generate electricity would be diverted to the hot water, meaning it is possible that the benefits would be marginal or non-existent, especially if the plant were to be displacing ground source heat pumps as a heat source.

157. **Further capture of carbon dioxide in from flue gases**

158. The Applicant is right not to claim credit for what is again an uncertain benefit, that deserves no weight in the planning balance.

159. **Benefits of plastics recycling**

160. The Applicant did not claim additional credit for plastic recycling on the basis that the plastic would be recycled elsewhere, which is reasonable.

161. The Applicant did not estimate the potential adverse impacts of their plant with respect to the impact of their plant adversely impacting recycling more generally, and this is likely to far outweigh any claimed benefits of plastic recycling at the plant.

Using CCGT as the electricity generation offset

162. At Paragraph 6.27 of REP7-032 the Applicant states: **"Whilst reduced usage clearly is a change in demand, the introduction of new capacity does not lead to that outcome. This is an assertion without foundation".**

163. UKWIN provided just such a foundation in REP6-042:

a) Paragraphs 94-95 of REP6-042 noted that there is such a foundational basis by reference to page 11 of 'Valuation of energy use and greenhouse gas (GHG) emissions: Supplementary guidance to the HM Treasury Green Book on Appraisal and Evaluation in Central Government' which ties the modelling work to assessing sustained "changes to the grid electricity supply (from either displacement with other generation or a demand reduction)". This statement is retained on page 11 of the April 2023 version of the Government's guidance.

b) Paragraph 97 of RPE6-042 noted that foundation is also provided within footnote 29 of the UK Government's EfW Guide which states: "When conducting more detailed assessments the energy offset should be calculated in line with DECC guidance using the appropriate marginal energy factor". Footnote 29 provides a hyperlink to a webpage which sets out the Long-run Marginal Emissions Factors (MEF) and associated current (April 2023) Supplementary guidance.

164. There would be no reason for the Government to include footnote 29 and a hyperlink to the MEF information if the correct counterfactual for detailed analysis was CCGT.

165. Paragraph 94 of REP6-042 also noted that further evidence on the foundation of the statement regarding applying the MEF rather than CCGT was set out in REP2-109.

166. REP2-109 is UKWIN's Good Practice Guidance for Assessing the Greenhouse Gas (GHG) Impacts of Waste Incineration, and the section on accounting for displacing other sources of electricity and/or heat is set out on internal pages 53-64 of that document.

167. REP2-109 includes further details on UKWIN's foundation.

168. The section on ‘Defra Guidance on the use of Long Run Marginal Emissions Factors’ is included on pages 57-58 of REP2-109, and states:

For simplicity's sake, the initial version of the UK Government's Energy from Waste (EfW) Guide mentioned CCGT rather than the long-run marginal emissions factor (MEF) as the counterfactual for displaced electricity. In 2012, at the time the EfW Guide was being written, CCGT was associated with a carbon intensity of around 356 gCO2e/kWh and the relevant MEF was around 343 gCO2e/kWh. Unfortunately, this simplification was then misinterpreted by some to mean CCGT would always be the appropriate comparator (energy generation counterfactual) to use for new incineration projects, even when the grid was significantly decarbonised.

In response to a query about the potential for this oversimplification to cause confusion, Defra stated in November 2013 that the only reason their EfW Guide referred to CCGT rather than the MEF was because: "The detailed marginal energy mix is quite a complex concept to explain and was beyond the scope of the document. The current level of long run marginal mix [in 2013] is essentially equivalent to CCGT, as this dominates the current [2013] calculation".

In their November 2013 letter Defra went on to explain that: “For specific calculations the DECC guidance is correct, long run marginal emissions factors should be used".

The point was subsequently further clarified in the 2014 revision to the EfW Guide, which states at Footnote 29 to Paragraph 41 that: “…When conducting more detailed assessments the energy offset should be calculated in line with DECC [now BEIS] guidance using the appropriate marginal energy factor https://www.gov.uk/government/publications/valuation-ofenergy-use-andgreenhouse-gas-emissions-for-appraisal”

Given the significant decarbonisation of the grid that has occurred since the Government's EfW Guide was revised, it should be considered that the reference to CCGT is now out-of-date, and that modelling should instead be based on the relevant BEIS long run marginal emissions factors (MEFs) in line with the footnote to the EfW.

The use of the MEF, instead of CCGT, as the correct energy generation counterfactual is confirmed by Paragraph 68 of Defra's 'Carbon based modelling approach', which states that: "It is assumed that the source of energy being replaced would have been generated using a plant with the carbon intensity (emissions factor) of the marginal energy mix in line with HMT Green Book guidance on appraisal and evaluation…"

The footnotes to Paragraph 68 of Defra's 'Carbon based modelling approach' make it clear that whilst CCGT was considered an appropriate counterfactual for use in 2013 it does not remain appropriate for future years because of the progress being made to decarbonise the UK's electricity supply. The report explicitly confirmed that "use of the [BEIS] marginal factor is the correct approach for detailed analysis".

169. At Paragraph 6.30 of REP7-032 the Applicant states: **“Finally, in response to paras 97-99, a conventional gas-fired power station is the comparator clearly stated by Defra in the Guide. Unquestionably, the Applicant is correct in applying it…”**

170. As noted above, while the Defra guidance does refer to CCGT this is explained as being a ‘simplification’ on the basis that at the time the EfW was published the marginal mix was similar to CCGT.

171. Footnote 29 to the EfW Guide makes it clear that the marginal should be used, not CCGT. However, if CCGT is to be considered then as previously noted by UKWIN this consideration ought to include ‘abated’ CCGT (i.e. CCGT with carbon capture) and not just unabated CCGT.

CAPACITY

Cement kiln capacity

172. At Bullet 2 of paragraph 6.33 the Applicant states: **“In paragraph 5b), UKWIN uses a 2017 Eunomia report to justify its assumption of 1mte waste going to cement kilns in 2030. The Applicant has reviewed this document but has not been able to find reference to this figure”.**

173. The attribution of the 1Mt figure to Eunomia's report is set out in Tolvik's UK Residual Waste 2030 Market Review (November 2017) which notes that: "Eunomia assumes that by 2030 1.0 Mt of Residual Waste will be sent to cement kilns. As explained in the report, the figure is based on 'theoretical capacity that can be used at technically capable cement kilns, at a fuel substitution rate of 40% in energy terms'. It adds 'in some cases this will be an under-estimate of what certain cement kilns are already accepting'".

174. Tolvik’s statement is presumably based on a personal communication between Tolvik and Eunomia regarding the cement kiln assumptions in their report, and/or a presentation delivered by Eunomia at the report’s launch which provided further detail that was not explicitly stated within the report.

175. Even if the figure did not appear in Eunomia’s report, it would be reasonable to assume as part of the North Lincolnshire waste fuel availability analysis that significantly more SRF is likely to end up in cement kilns in the future to displace ‘higher carbon’ fossil fuel sources.

176. For example, in November 2022 waste production and supply specialist N+P published on their website an article entitled ‘Why alternative fuel use in the cement industry is working so well’.

177. The article included the following passage: “Harnessing waste instead of using fossil fuels always promised monetary savings for kilns, but that is particularly so in the current geopolitical and economic environments where energy prices are at record highs.

Purchasing domestically sourced alternative fuels allows kilns to avoid wholesale fossil fuel prices, eliminate currency fluctuations, and dodge geopolitical disruption. The current economic reality means that some kilns may not be viable if they continue to rely on fossil fuels.

Fortunately, many of the beliefs preventing cement kilns from accessing the financial benefits of alternative fuels have been dispelled. In the past, it was often assumed that alternative fuels could only be used in newer kilns, would require major modifications to production processes, and would lead to process instability. In fact, alternative fuels can be adopted even by older kilns with many examples in operation today.”

SAF capacity

178. At Bullet 3 of paragraph 6.33 the Applicant states: **"In paragraph 6 UKWIN refers to SAF facilities. It appears that UKWIN has subtracted from the 'waste as fuel available' line its assumption of 2.1 mtpa of use by SAF facilities. None of these facilities has reached financial close, only one has planning consent, and the Jet Zero Policy (which has not yet been enacted) does not specify which feedstocks should be used to meet an SAF mandate. Hence UKWIN's assumption is considered to be highly speculative".**

179. If it were assumed that there would not be any waste-to-SAF capacity, then either it could hamper efforts to support that sector by discouraging SAF plants from going ahead or it could result in overestimating future available waste for non-SAF projects such as conventional incinerators.

180. This topic is discussed further in UKWIN's previous submission, and with respect to the latest Government publications on the topic that are set out above.