UNITED KINGDOM WITHOUT INCINERATION NETWORK

Britaniacrest Recycling Ltd Application for Former Wealden Brickworks (Site HB), Langhurstwood Road, Horsham West Sussex RH12 4QD

Application Reference: WSCC/015/18/NH

UKWIN Objection and Request for R1 Planning Condition

"Recycling, Recovery and Renewable Energy Facility and Ancillary Infrastructure"

April 2018

Introduction

1. The United Kingdom Without Incineration Network (UKWIN) was founded in March 2007 to promote sustainable waste management. Since its inception, UKWIN has worked with more than 120 member groups.

2. As part of fulfilling our aims and objects, UKWIN works to help facilitate access to environmental information, public participation in environmental decision-making, and access to justice in environmental matters. Where relevant we also make representations to consultation exercises to help ensure that relevant matters are considered.

3. In addition to **objecting** to the proposal, this submission also asks that further information be requested of the applicant by the Waste Planning Authority (WPA) and that, if planning permission is granted, a Design Stage R1 Planning Condition is attached in line with the condition previously imposed by the Secretary of State.

Relevant Government Statements in Relation to Climate Change

4. Incineration is known to exacerbate climate change by releasing CO2 when waste is burned. According to the Environment Agency: *"Between 0.7 and 1.7 tonnes of CO2 is generated per tonne of MSW [Municipal Solid Waste] combusted"*.[1]

5. The importance of understanding the specific technology being proposed as well as the net carbon impacts of the proposed facility compared to alternatives and the importance of understanding the assumptions regarding feedstock volume and composition, and how these are expected to change over time, is underscored by the Government's 2011 Review of Waste Policy.

6. We note, for example, that Paragraph 209 of the 2011 Waste Review states that: "...*while energy from waste has the potential to deliver carbon and other environmental benefits over sending waste to landfill, energy recovery also produces some greenhouse gas emissions. It is important to consider the relative net carbon impact of these processes, and this will depend on the composition of feedstocks and technologies used*".

[1] According to page 5 of the Environment Agency's "Pollution inventory reporting – incineration activities guidance note Environmental Permitting (England and Wales) Regulations 2010 Regulation 60(1)", Version 4 December 2012 available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296988/LIT_7757_9e97eb.pdf "Between 0.7 and 1.7 tonnes of CO2 is generated per tonne of MSW [Municipal Solid Waste] combusted".

7. Similarly, Paragraph 230 of the 2011 Waste Review states: "*Waste infrastructure has a long lifetime and therefore changes in the composition and potential volumes of waste in the future cannot be ignored in the development and selection of technologies now*".

8. The adverse environmental implications of waste incineration include the exacerbation of climate change through the release of greenhouse gas (GHG) emissions.

9. For the facility proposed for Horsham, with its 180,000 tonne per annum capacity, this equates to between about 126,000 tonnes and nearly 306,000 tonnes of CO2 released for each year of operation, or potentially more than around **9 million tonnes of CO2** over the anticipated 30 year operational period.

10. This should weigh heavily against the proposal.

11. UKWIN notes the explanation in the Government's EfW Guide that: "*Fossil based residual wastes, e.g. plastics that cannot be recycled, do not decompose in the same way as biogenic material in landfill. For these waste streams conventional energy from waste will almost always deliver a negative carbon balance compared to landfill*…"[2]

12. The applicant appears to have compared the proposed incinerator with sending the waste directly to landfill, without first being bio-stabilised, e.g. via an appropriate Mechanical Biological Treatment (MBT) process.

13. Highlighting the relative impacts of incineration and of sending waste to MBT prior to landfill, DEFRA's Waste Economics Team noted that: "*MBT-landfill provides the best emissions performance in terms of the treatment/disposal of residual waste. It essentially involves landfilling somewhat stabilised wastes with some material recovery. The magnitude of the environmental impact depends on the extent to which the waste is stabilised*".[3]

14. Even when waste is sent directly to landfill (without appropriate pre-treatment), there are various factors that are sometimes overlooked in modelling exercises in terms of the carbon sequestration effects of landfilling waste.

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[2] DEFRA's "Energy from waste: A guide to the debate", February 2014 (revised edition), available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284612/pb14130-energy-waste-201402.pdf

[3] DEFRA's " The Economics of Waste and Waste Policy", June 2011, available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69500/pb13548-economic-principles-wr110613.pdf

15. As noted in the Government's aforementioned EfW Guide: "…*considering the landfill route, all the fossil carbon stays in the ground and doesn't break down. The fossil carbon is sequestered, as is potentially up to half of the biogenic carbon depending on the exact conditions in the landfill*".

16. The impacts of biogenic carbon releases being avoided, sequestered or delayed in landfill compared to being immediately released as the result of incineration is erroneously omitted from some assessments of relative net emissions, and these omissions improperly favour incineration in such assessments.

17. On 3rd August 2015 Planning Inspector Mel Middleton decided to dismiss an appeal for a circa 140,000 tonne per annum incinerator proposed for the Former Ravenhead Glass Warehouse and other land at Lock Street, St. Helens, Merseyside WA9 1HS (Appeal Ref: 2224529, 'the Lock Street decision'). One of the issues material to the refusal was the poor "*carbon credentials*" of the plant - this was deemed to conflict with relevant local and national policies.

18. Paragraph 30 of the Lock Street decision states: "*In certain circumstances generating electrical energy from waste can contribute to carbon emissions to a greater extent than depositing the same material as landfill. It is therefore not a simple exercise to demonstrate that an EfW will have a positive effect on overall carbon emissions...*" *(emphasis added)*

19. Paragraph 19 of the Government's EfW Guide clearly states that*: "…residual waste also contains wastes from 'fossil' sources (oil etc.) such as plastic. Therefore when energy is recovered from mixed residual waste it is considered to be only a partially renewable energy source*". (emphasis in original)

20. In January 2018 Resource Minister Dr Thérèse Coffey, responding on behalf of the Department for Environment, Food and Rural Affairs (DEFRA) to a Parliamentary Question made clear that: *"A comparison of the CO_2 impact of waste going to energy from waste and landfill is included in the analysis of the 2014 report 'Energy recovery for residual waste: A carbon modelling based approach'. No formal analysis has been undertaken since this report was published*".[4]

[4] https://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2018-01-22/124194/

Climate Change Impacts of the Proposal

21. It is noteworthy that the applicant has not followed the methodology set out in 'Energy recovery for residual waste: A carbon based modelling approach' and does not justify their choice to deviate from the central assumptions of the Government-based approach.

22. UKWIN notes Paragraph 2.20.1 of Volume 1 Chapter 2 of the applicant's Environmental Statement (ES) explains that: *"A greenhouse gas assessment of the proposed thermal treatment facility, based on an estimate of its operational carbon footprint has been undertaken and is included at Appendix 2.3"*. UKWIN also notes that the Appendix 2.3: Carbon Assessment is in fact a report that was *"prepared to accompany the 2016 application"*.

23. The analysis contained within Appendix 2.3 fails to adequately set out all of the assumptions and methodologies applied and all of the underlying data and associated justifications for using those assumptions and methodologies.

24. Furthermore, some of the statements made within Appendix 2.3 appear to be contradictory, confused, and/or simply out-of-date.

25. If some of the omissions in the assessment are corrected then it appears that the development would have a significant adverse GHG impact, and therefore either additional information should be sought from the applicant or the application should be determined on the basis that climate change benefits have not been demonstrated and significant adverse change impacts have not been ruled out.

26. In relation to errors, it appears that the applicant and their consultants made a simple 'unit of measurement error' that results in an overstatement of emissions avoided through reduced transport by a factor of one thousand, i.e. the applicant's figure of 110,315 kilograms per annum was erroneously treated as if it were 110,315 tonnes per annum.

27. At Paragraph 9.6 of the applicant's 2016 Carbon Assessment the applicant adopts a '0.70' conversion factor, stating: *"Therefore the impact of the 3R Facility is to reduce vehicle-Kilometers by 157,140 Km per year, and from the Department of Energy & Climate Change standard set of GHG conversion factors 2016 for all HGVs (diesel), the CO2 conversion factor is 0.702022 per Km".*

28. The unit of the 0.70 CO2 is not stated by the applicant, but if one goes back to the DECC source document it is noted to be 0.70 kilograms of CO2e per kilometre.

29. To quote the DECC spreadsheet: *"All conversion factors presented here are in units of 'kilograms of carbon dioxide equivalent of Y per X' (kg CO2e of Y per X), where Y is the gas emitted and X is the unit activity. CO2e is the universal unit of measurement to indicate the global warming potential (GWP) of GHGs, expressed in terms of the GWP of one unit of carbon dioxide".*

30. As per DECC's source spreadsheet, the standard set conversion factor cited is 0.70kgCO2e/km (equating to only 0.0007tCO2e/km), but the applicant appears to be working on the basis that the factor is expressed in tonnes (0.70tCO2e/km), which is one thousand times higher than DEC's actual figure.

31. This means that the result of applicant's calculation of 157,140km x 0.70 is actually 110,315 kilograms of CO2 avoided per annum, i.e. only 110 tonnes of CO2 per annum. However, Table 3 of the 2016 Carbon Assessment uses the 110,315 kilogram figure as it if were 110,315 tonnes rather than 110 tonnes.

32. Over the expected lifetime of the plant this mistake with transport emissions adds up to overstating avoided emissions by more than **2.75 million tonnes of CO2** ((110,135 - 110) x 25).

33. In relation to inconsistencies, Paragraph 5.3.6 of the applicant's 2016 Carbon Assessment (Appendix 2.3) talks about "*21 MW recovered as electricity and exported to the grid at a net efficiency of **28.4%**".* This is clearly not consistent with Paragraph 8.4 of the Planning Supporting Statement, which states that "*18 MW would be available for export to the national grid*". (emphasis added)

34. Another inconsistency is that the Executive Summary of the Planning Statement says that the proposal involves: *"Generating 21Mw of renewable energy to be transported to the local distribution network"* which, based on statements that the gross generation capacity is 21MW, implies that 100% of the feedstock (and therefore 100% of the energy) would be renewable, whereas the composition in Table 1 of the 2016 Carbon Assessment states that the feedstock would include non-renewable fossil-based material such as plastic.

35. The applicant has not explained how they get from the energy content of their proposed feedstock composition to their claimed level of electricity export.

36. Their claimed composition in Table 1 of the 2016 Carbon Assessment includes a high proportion (44.75%) of putrescibles which tend to contain less energy than high-calorific value (CV) feedstocks such as plastic.

37. As Footnote 31 of the Governments' EfW Guide notes: *"Some wet* [i.e. putrescible] *wastes e.g. food are not particularly suitable for energy from waste"*.

38. The following assumptions have been adopted in order to attempt to reconcile these inconsistencies for the purpose of producing an indicative, partially corrected, version of the applicant's Table 3 'Summary of estimated emissions (tCO2 equivalent per annum)':

    a. The properties of the feedstock (e.g. calorific value, proportion of biogenic carbon, etc.) are assumed to be those set out in the Government's 'Energy recovery for residual waste: A carbon based modelling approach', using the input waste composition data given by the applicant in Table 1 of their 2016 Carbon Assessment; and

    b. The applicant's 28.4% efficiency figure (based on generation of 21 MW) is for gross efficiency, and their 18MW export figure implies a net efficiency of 24.3%; and

    c. The applicant's assumed 44.75% of putrescibles in the feedstock would be comprised of garden waste; and

    d. As the assessment is intended to examine the impact of incineration versus landfill, the model below assumes that material recovery would occur irrespective of the final treatment option (and therefore the -37,684 figure for 'Materials Recovery' has been excluded from the calculations).

39. If one were to consider the impact of Materials Recovery then the correct approach would be to use a counterfactual of MBT-Landfill, which would not only recover recyclables prior to landfill but which would also bio-stabilise the waste sent for landfill and therefore reduce the emissions of methane from landfill and increase the 'biogenic carbon sink' benefit of landfill.

40. This would result in the proposal performing even worse than landfill than is shown in the partially corrected modelling below.

41. Indeed, given the high quantity of putrescible waste it would also be appropriate to include separately collecting this feedstock for composting and anaerobic digestion (AD) as part of an alternative treatment scenario.

42. The proposed facility's performance against a composting/AD counterfactual would be even worse than comparison with MBT-Landfill.

43. In addition to the errors set out above, and in addition to inconsistencies in relation to both efficiency and uncertainties regarding composition highlighted above, we would like to draw attention to two further significant problems with the applicant's 2016 carbon assessment, as follows:

    a. The incorrect marginal emissions factor (MEF) is used; and

    b. The biogenic carbon sequestration benefits of landfill are not accounted for.

44. Paragraph 6.2 of the 2016 Carbon Assessment states that the modelling assumes a 2016 conversion factor of 0.41205 kgCO2e/kW, which in Table 3 is multiplied by 168,000 kWh to provide displaced electricity generation of -69,224.

45. Applying the 2016 conversion factor is not consistent with the most recent Government guidance from December 2017.

46. As explained in DEFRA's 'Energy recovery for residual waste: A carbon based modelling approach' (February 2014): *"…we should use the marginal energy mix which represents the carbon intensity of generating an additional kW of electricity…"* (emphasis added)

47. Footnote 29 of the Government's 2014 EfW Guide states that: *"When conducting more detailed assessments the energy offset should be calculated in line with DECC guidance using the appropriate marginal energy factor"*. (emphasis added)

48. The DECC guidance has now been taken up by BEIS, DECC's successor. The appropriate marginal energy factor (MEF), i.e. the generation-based long-run MEF, is provided in BEIS' Green Book supporting data tables.

49. According to Table 1 of the Green Book's supporting data tables (Department for Business, Energy & Industrial Strategy (BEIS), December 2017), the generation-based long-run marginal emissions factor for new energy generation facilities entering commissioning in 2020 is 0.270 kg CO2e/kWh and the 2020 generation-based grid average is 0.181kg CO2e/kWh.

50. When the Government's 0.270 kg CO2e/kWh MEF for 2020 is applied, with an assumed net efficiency of 24.3% alongside using an energy input (of around 2.58 MWh/t) based on the applicant's Carbon Assessment Table 1, then the applicant's -69,224 figures becomes **-30,474 tCO2 equivalent per annum** (i.e. 180,000 tonnes x 2.580427 x 0.243 x 0.270).

51. In addition to using the correct MEF, the comparison should also properly account for biogenic sequestration in landfill.

52. Whilst the applicant assumes that half of the biogenic carbon is sequestered in landfill, and whilst the applicant uses this assumption to reduce the assumed quantity of methane released from landfill, the applicant fails to follow best practice by neither crediting landfill with 'negative emissions' for this sequestered biogenic material nor including the additional release of this biogenic carbon on the incineration side of the equation.

53. As noted in the evidence-based recommendations of Eunomia's 2015 report entitled 'The Potential Contribution of Waste Management to a Low Carbon Economy': *"All lifecycle studies engaged in comparative assessments of waste treatments should incorporate CO2 emissions from non-fossil sources in their comparative assessment".*[5]

54. Eunomia's report also explains that: *"In comparative assessments between waste management processes, it cannot be considered valid to ignore biogenic CO2 emissions if the different processes deal with biogenic CO2 in different ways…"*

55. As stated at Paragraph 18 of DEFRA's 'Energy recovery for residual waste A carbon based modelling approach' (February 2014): *"…some biogenic carbon that would be released in energy recovery is sequestered in landfill".*

56. DEFRA's document goes on to explain, at Paragraphs 171-173, how: *"…the model assumes that not all of the biogenic material decomposes in landfill but it is all converted to CO2 in energy from waste. Landfill therefore acts as a partial carbon sink for the biogenic carbon. This is a potential additional benefit for landfill over energy from waste. There are two ways to account for this additional effect:*

    - *Estimate the amount of biogenic carbon sequestered and include the CO2 produced from the same amount of carbon in the EfW side of the model (or subtract it from the landfill side)*
    - *Include all carbon emissions, both biogenic and fossil on both sides of the model*

    While both approaches would address the issue of sequestered biogenic carbon the first would potentially be the better solution as it would avoid double counting carbon with other inventories." (emphasis added)

57. When the biogenic sequestration in landfill is taken into account, using the same waste composition data as above and the same MEF of 0.270 as above, the

[5] https://zerowasteeurope.eu/downloads/the-potential-contribution-of-waste-management-to-a-low-carbon-economy/

applicant's -76,505 figure for Landfill Diversion becomes **-3,892 tCO2 equivalent per annum**.

58. It should be noted that the -3,892 tCO2e/annum figure is derived using the central assumptions from DEFRA's Carbon Based Modelling Approach, e.g. in relation to landfill gas engine efficiency.

59. Correcting these issues has a material impact on the conclusions of the carbon modelling that should weigh heavily against the proposal in the planning balance.

60. These adjustment are summarised in the Partially Corrected Table 3 below:

Partially Corrected Table 3

Emissions Source	**Proposed Facility Electricity only (uncorrected)**	**Proposed Facility Electricity only based on 24.3% net efficiency (partially corrected)**
Process	+50,955	+50,955
Transport	-110,315	-110 [i]
Avoided CO_2		
Displaced Electricity Generation	-69,224	-30,474 [ii]
Materials Recovery	-37,684	Not applicable [iii]
Landfill Diversion	-76,505	-3,892 [iv]
Total	-242,773	+16,479

[i] Corrected to account for the applicant's 'unit of measurement error', as explained in Paragraphs 26 - 32 above.

[ii] Corrected to apply an assumed net efficiency of 24.3% while applying the correct MEF of 0.270 (rather than the applicant's 0.412 conversion factor)

alongside using an energy input based on the applicant's Carbon Assessment Table 1, as explained in Paragraphs 33 - 50 above.

[iii] As per Paragraph 38 (d) above.

[iv] Corrected to account for biogenic sequestration in landfill (applying assumption's from DEFRA's Carbon Based Modelling Approach), as explained in Paragraphs 51 - 58 above.

61. Therefore, based on a partially corrected version of the applicant's own estimated emissions scenario, sending the waste to the proposed incineration facility would be **16,479 tcO2e per annum <u>worse</u>** than sending that same waste directly to landfill.

62. Other problems that we have observed in relation to the applicant's 2016 carbon assessment include:

    a. the transport assumptions (which appear to overstate the benefits of incineration, and which do not take account of diesel vehicles being replaced with electric vehicles during the lifetime of the proposed facility); and

    b. the landfill gas engine efficiency (which appear to overstate the benefits of incineration).

63. As should be clear from the issues raised above, the conclusions of the applicant's 2016 carbon assessment cannot be relied upon to provide an accurate description of the likely environmental impacts of the proposal.

64. Problems inevitably arise from the applicant's fundamental failure to correctly follow an accepted methodology applying a set of justified assumptions. We hope that these problems will be resolved as part of any revised climate change assessment required of the applicant by the WPA.

65. Alternatively, we would expect the WPA to determine the application on the basis that the proposal would contravene the strategic objective to minimise carbon emissions, and would therefore go against Waste Local Plan SO 14 as well as other local and national plans and policies in relation to carbon emissions and climate change.

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66. ES Volume 1, Chapter 2 states: *"2.4.18 The efficiency of the facility determines the remaining energy available for export. It is not possible at this stage to state what the exact efficiency would be, but it would be more than sufficient to meet the energy efficiency requirement for a recovery facility of 0.65 set out in the Waste Framework Directive (2008/98/EC). In consequence the facility would qualify as "recovery" under Article 3 of the Directive."*

67. The facility proposed for Horsham should, if granted planning consent, be given a Design Stage R1 Planning Condition in line with previous decisions by the Secretary of State and other local authorities to promote movement of waste management up the Waste Hierarchy, in line with local and national policies.

68. Appendix A of the National Planning Policy for Waste sets out a five-step waste hierarchy, with the bottom tiers being 'Other Recovery' followed by 'Disposal'.

69. The accompanying footnote states that: *"The full definition of each level of the waste hierarchy is set out in Article 3 of the revised Waste Framework Directive (2008/98/EC)"*.

70. As set out in the Government's EfW Guide and as elaborated upon in further detail in the European Commission's *'Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste*', inefficient Energy from Waste (EfW) plants are classified as 'Disposal' at the bottom of the Waste Hierarchy rather than as 'Other Recovery', even in cases where some energy is generated.

71. UKWIN draws the WPA's attention to the Secretary of State imposed Condition 16 for the Bilsthorpe Energy Centre (PINS Ref. 3001886).

72. That condition states: *"Prior to the development hereby permitted being brought into use, the operator shall submit to the Waste Planning Authority for approval in writing, verification that the facility has achieved [Design] Stage R1 Status through Design Stage Certification from the Environment Agency. The facility shall thereafter be configured in accordance with these approved details. Once operational, alterations to the processing plant may be undertaken to satisfy Best Available Technique or continued compliance with R1"*.

73. Indeed, it is currently a matter of course to impose Design Stage R1 Planning Conditions. For example:

    a. **Birmingham City Council** - Rolton Kilbride's 105ktpa gasification plant at Castle Bromwich. Condition 32 of 2015/09679/PA.

    b. **West Sussex County Council -** Grundon's Circular Technology Park. Condition 24 of WSCC/096/13/F.

    c. **Warwickshire County Council -** Rolton Kilbride's Hams Hall gasification plant - Condition 21 of NWB/16CM011

    d. **Bradford City Council -** Endless Energy Ltd's 90ktpa RDF plant in Keighley. Condition 45 of 16/06857/FUL.

    e. **Selby District Council -** Kingspan's 132tktpa RDF plant in Sherburn in Elmet. Condition 23 of 2016/1456/EIA

    f. **Nottingham City Council** - Chinook Sciences' 160ktp plant in Bulwell. Condition 20 of 13/03051/PMFUL3

Previous UKWIN Comments on Planning Committee Report

74. UKWIN draws the WPA's attention to UKWIN's comments made in relation to Application Reference: WSCC/062/16/NH in general, and in particular the comments from UKWIN's Technical Adviser Tim Hill C Eng made on 30th January 2017 and 8th June 2017 as follows:

    a. *Referring to the Planning Statement Appendix G Carbon Assessment, the Applicant has (a) failed to make available supporting calculations setting out the carbon effects of start up fuel and imported electricity / electricity generated within the plant, and (b) assumed that electricity generation emission avoided by production of electricity at the proposed ERF is 0.41205 kgCO2e/kWh electricity generated. This is incorrect...*

    b. *The applicant's analysis presents a misleading picture and until the aspects above have been taken account of and included, it cannot be assumed that the proposed facility represents an improvement over landfill.*

    c. *The applicant has failed to clarify the basis on which their net overall energy efficiency figure. The applicant should be asked to make available (i)an Energy flow Sankey diagram and (ii) a heat flow diagram.*

    d. *…I note that, in relation to Paragraph 4.20 of the Planning Officer's report, the statement that: "The Environment Agency would control the efficiency of*

the facility to ensure that the process qualifies as 'recovery' (in accordance with the R1 formula, referred to in representations) and to optimise the amount of electricity available for export outside of the facility." is fundamentally flawed. The Environment Agency (EA) does not control the efficiency of a waste incineration facility. Based on the relevant design data that should have been submitted by the applicant as part of the planning application, and any further information that would be required by the EA as part of a bespoke R1 application, the EA will indicate if the proposed incinerator can be expected to achieve an R1 value of 0.65 (recovery status) or (if less than 0.65) it retains its disposal status. The planning committee should, prior to the Tuesday 18 July 2017 meeting, be made aware that, if minded, notwithstanding the planning officers recommendation to refuse, to consent, then a condition should be set to the effect that consent is dependent on the EA deciding that, based on the design data, an R1 value of 0.65 or greater can be expected.

UKWIN Comments on the Applicant's Air Quality Assessment

75. UKWIN notes that Table 7.8: Mass Emissions from the applicant's Environmental Statement (ES) Volume 1, Chapter 7 on Air Quality and Odour appears to omit figures for total organic carbon (TOC) despite the fact that emissions are limited by the Industrial Emissions Directive (IED) and despite the fact that the applicant themselves include benzene as a main air pollutant (e.g. at Paragraph 7.2.18).

76. UKWIN urges the WPA to ask the applicant to provide TOC data, expressed as benzene (i.e. assuming all TOC is benzene), in accordance with standard practice and with IED requirements and with the relevant requirements of Environmental Impact Assessment legislation.

77. In relation to the applicant's attempt to assess emissions associated with a 'worst case scenario' UKWIN draws attention to Paragraphs 7.2.4 and 7.3.39 of the applicant's ES Volume 1, Chapter 7.

78. Paragraph 7.2.4 states: "For the purposes of this assessment for those pollutants having only one emission limit (for a single averaging period), the facility has been assumed to operate at that limit".

79. Paragraph 7.3.39 states: "As there are 8,760 hours in a non-leap year, the hourly-mean concentration would need to be below 200 µg.m-3 in 8,742 hours, i.e. 99.79% of the time".

80. It should be noted that the limits set out in 'Table 7.1: Relevant Industrial Emission Directive Limit Values' can be exceeded not only during start-up and shut down but also during normal operation.

81. The standard way that the Environment Agency (EA) would assess monitored emissions against the Emissions Limit Values (ELVs) is to subtract the uncertainty of the measurement from the value and to compare this lower figure against the ELV.

82. This means that the greater the level of uncertainty the lower the assumed emissions when compared to the ELV. Subtracting uncertainty in this way would imply that actual emissions could exceed the ELV by a greater margin than is allowed for by the applicant in their 'worst case scenario' assessment, e.g. by twice the 'uncertainty budget' allowed for under the ELV.

83. As such, the applicant's proposed 'worst case' scenarios could be significantly underestimating the potential permitted emissions from the plant.