

Internal pages 8-10 of REP6-033 set out the Applicant's response to my submission REP5-045 which focused on modelling of NO_x dispersion that could arise from the proposed development.

My commentary on the Applicant's response is set out below.

I can confirm that the 'Plumescape' plume plots included in REP4-045 were created using AERMOD applying the Applicant's parameters specified in Tables 16 and 18 of the Applicant's Air Quality Assessment (APP-053). The term 'Plumescape' was used to refer to the specific use of the AERMOD to produce contour plot maps with an OpenStreetMap base layer. The modelling software used for the Plumescape plume plots was AERMOD, and so for convenience my response will use the term 'AERMOD Plumescape' to refer to the AERMOD modelling that produced the contour maps submitted in REP6-033.

The AERMOD Plumescape model used the emission rate of 3 x 6.78 g/s for NO_x to reflect the number of flues specified and the rate of NO_x emission of 6.78 (g/s) stated in Table 18 of APP-053 based on the assumption that the Applicant's statement of '(g/s) per stack' was intended to mean '(g/s per flue)'. The same values are used in REP4-041 which is Revision 1 of the Air Quality Assessment (AQA).

In the AERMOD Plumescape modelling, only the ERF stack (with three flues) was modelled, not the other sources that may have been included in the AQA model. No wind turbine was modelled. The AERMOD Plumescape model includes the buildings specified in Table 16 and Figure 2 of APP-053, even though they seem to be wrong because they are aligned north-south. The AERMOD Plumescape model assumes a base elevation of 4 m above sea level, as specified in the Applicant's AQA (APP-053), even though this is slightly too low, as admitted in Section 4.3.5.2 of the AQA. (That is, the bases of the stack and buildings are at 4 m). NASA's Shuttle Radar Topography Mission (SRTM) is an international research effort that obtained high quality global topographic elevation data. The AERMOD Plumescape model includes terrain data, using SRTM data, whereas the Applicant's AQA modelling was less accurate in that it assumed completely flat terrain.

Many incinerator AQAs use SRTM terrain data, although some UK ones use OS terrain data instead. Therefore, they should be familiar with this. SRTM data is used by Plumescape these days especially because it works (almost) anywhere in the world.

The AERMOD Plumescape model assumes a surface roughness of 0.4 m, which is the same as specified in the AQA for the pollution site. The AERMOD Plumescape model also assumes an albedo of 0.2 and a Bowen ratio of 1.0. The site characteristics used by the Applicant in their AQA modelling were not reported in the Applicant's AQA, except roughness (and a broad statement that the surface characteristics are 'representative of mixed industrial and agricultural land use', as set out in Table 15).

The AERMOD Plumescape plume plots did not use weather data from Doncaster Sheffield airport (as used in the Applicant's AQA) because the airport recently closed down, including its weather station. Instead, each plume plot used weather data from one of several nearby synoptic weather stations.

All the AERMOD Plumescape plume plots show the annual mean fallout of NO_x for a specific year. This is clearly stated in the top-right corner of each plot. They are supposed to be compared

with Figure 6 of the Applicant's AQA (â€˜NOx Annual Mean Contours'), which also plots annual mean NOx fallout. Obviously, the predicted NOx concentrations would need to be multiplied by a factor of 70% to estimate the average NO2 fallout in line with standard industry practice.

With regards to comments made by the applicant in Applicant response to deadline 4 REP5-037 9.23.4.7 as to the validity of the Climate Central flood map referenced by both myself and also by the Humber 2100+ project, may I suggest visiting the Climate Central website and the information is there. The map was compiled by NASA and makes very interesting reading. This map is not something that can be waved away with the stroke of a pen as if the prediction becomes reality the project could be doomed from the start.

In REP6-033 9.25.2.13 the applicant quotes proximity legislation regarding the EU. May I remind the applicant that we are no longer part of the EU and updated and more fit for purpose waste legislation may well be forthcoming to more realistically represent the needs of the UK. Also the applicant stresses that waste "competition" may require waste to be transported longer distances to where it is needed. Has the applicant mis-interpreted the meaning of the proximity principle as surely the object of waste disposal is not to create competition thus encouraging a greater volume of waste and encourage it's transport round the UK, but to reduce volumes by ethical and sustainable recycling of waste creating the competition to reduce and reuse rather than have waste as a product in demand? In line with current government thinking - a circular economy with waste as recyclable raw material - should this be at the heart of waste management policy to increase sustainability? To create competition at any point in the dead end part of waste disposal by over population of the UK's incineration network will lead to extreme fuel poverty and so negating the need for this project on basic principles? Surely the applicant realises this and if not, then why not?

I have not had a response from the applicant on two other important points:

1. The statement by Mr Bradley of Solar 21 that the river and the rail are just a smoke screen as it [the rdf] will all be delivered by road anyway.
2. The bat roosts under the existing road bridges that cross the rail link situated in Flixborough village and at Bagmoor? No amount of mitigation will get around the law governing these sizeable roosts, so what is the intention of the applicant regarding these?