

Odour from Anaerobic Digestion (off the M25)

D. Williams & Co. proposed to construct a new anaerobic digestion (AD) plant to the north of the M25 at Cattlegate Farm, Enfield, Middlesex, to process ~25,000 tonnes of food waste per annum. The design for the AD plant was based on a wet fermentation process and the feedstock was to be used to generate biogas and the subsequent generation of electricity for export to the national grid.

Potential emissions to the atmosphere from the AD process included odour from the air handling system from extract ventilation; and fugitive odour emissions from doorways when opened for vehicles. The Airshed conducted a rigorous odour impact assessment to help inform the odour abatement requirements for the proposed scheme.

Detailed engineering design information was not available at planning stage. The odour impact assessment was therefore based on a conceptual design provided by the applicant and their preferred equipment suppliers. The assessment also needed to take account of the applicants intention to develop a separate green waste composting site nearby.

The assessment assumed that all odour from the AD plant would be captured by air extraction with 3 air changes per hour within the waste reception building and where emissions would be passed through two bio-filters before being released from a short stack, to improve residual dispersion.

Several abatement Scenarios were considered to ensure that the abatement would provide a high level of protection for amenity without imposing unrealistic costs on the development.

Odour impacts were assessed in accordance with EA draft Guidance (H4). Emission dispersion was predicted using a dispersion model (ADMS 4.2) and five years of hourly sequential meteorological data from Heathrow as supplied by the Met. Office. The assessment included a model sensitivity analysis for stack height, building effects, terrain effects, surface roughness and meteorological variability.

The AD scheme was granted planning permission in December 2011, subject to a legal agreement.

