



**MERCIA WASTE
ENVIRECOVER FACILITY
SUMMARY PROOF OF EVIDENCE**

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PROOF OF EVIDENCE OF STEPHEN OTHEN SUMMARY

Public Inquiry Under Section 77 of the Town and County
Planning Act 1990 (as amended)

Application by Mercia Waste Managemnt Ltd for the
proposed development of an energy from waste facility
on land at Hartlebury Trading Estate, Hartlebury,
Worcestershire.

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1 Introduction

- 1.1 I am the Technical Director of Fichtner Consulting Engineers Ltd. I hold a Master of Engineering degree in Chemical Engineering from the University of Cambridge and I am a Chartered Chemical Engineer and Member of the Institute of Chemical Engineers.
- 1.2 I have worked at Fichtner Consulting Engineers Ltd since 1998 and I have worked for a variety of clients in a number of industries, but my main focus has been the waste industry. I have provided services for all of the major energy-from-waste plant operators and developers in the UK. These services have included reviews of operation and development of upgrade and improvement programmes. I have also been responsible for the preparation of permit applications under the Integrated Pollution Control, Integrated Pollution Prevention and Control and Environmental Permitting regimes for over twenty combustion plants processing municipal waste, refuse-derived fuel or biomass.
- 1.3 I am a member of the Environmental Services Association Operators Working Group. In this role, I have been involved in discussions with the Environment Agency on the implementation of the R1 Recovery formula in the UK and the Environment Agency's intended regulatory role.
- 1.4 In the context of the Envirecover Facility specifically, I was responsible for the successful Environmental Permit application and for the air quality assessment which was submitted as part of the Environmental Statement.
- 1.5 My evidence covers a number of technical aspects of the proposal. The policy implications of my evidence are considered by Mr Roberts.

2 Recovery Definition

- 2.1 I have evaluated the status of the plant under the Waste Framework Directive and the CHP Quality Assurance Scheme (CHPQA).
- 2.2 I have demonstrated that the Envirecover Facility would be regarded as a Recovery Operation under the Waste Framework Directive. This is because the energy efficiency factor, calculated according to European Commission Guidelines on the R1 Recovery formula, would be 0.693 if the plant only generated electricity, or slightly higher if the plant generates electricity and exports steam. This factor is above the threshold value of 0.65 for being defined as Recovery.

3 Options Appraisal

- 3.1 A technical options appraisal was carried out for the original planning application and included as an attachment to the Environmental Statement. This options appraisal used version 1 of the Environment Agency's WRATE software.
- 3.2 Since the planning application was submitted, version 2 of the WRATE software has been released, which made a number of changes. Therefore, Fichtner have repeated the options appraisal using the new version, in order to confirm that the conclusions remain valid.
- 3.3 In addition, in the light of WAIL's comments on the use of Anaerobic Digestion, the updated options appraisal has considered the use of this technology for separately collected food waste.
- 3.4 The results of the updated study were as follows:
- a) Changing to the latest version of the WRATE software did not change the ranking order of the different options. However, the gap between the top two options, which were based on the Envirecover Facility with and without heat export, and the third option, which was based on autoclaves, increased, meaning that the Envirecover Facility was clearly the preferred option.
 - b) The solution proposed by WAIL scores relatively poorly. This is mainly due to a poor performance against most environmental criteria.

4 Impact on Climate Change

- 4.1 I have considered the impact of the Envirecover Facility on emissions of greenhouse gases.
- 4.2 I have compared two cases: 200,000 tonnes of waste processed at the Envirecover Facility and the same 200,000 tonnes of waste sent to landfill.
- 4.3 The Envirecover case takes account of:
- a) The release of non-biogenic carbon dioxide from burning waste at the Facility;
 - b) The release of nitric oxide (N₂O) from the Facility;
 - c) The generation of electricity, displacing electricity generated by fossil-fuel power stations.
- 4.4 The landfill case takes account of:
- a) The release of methane in landfill gas;
 - b) The capture of some landfill gas to generate electricity in gas engines, displacing electricity generated by fossil-fuel power stations.
- 4.5 I have concluded that the operation of the Envirecover Facility would reduce overall emissions of greenhouse gases by between 14,900 and 182,100 tonnes of CO₂ equivalent per annum, depending on the assumptions made on landfill operation and power displacement.
- 4.6 The WRATE assessment carried out for the options appraisal concluded that the benefit of the facility would be a reduction of around 18,000 tonnes of CO₂ equivalent per annum, but this did not take account of the benefits associated with avoiding landfill.

5 Heat Users

- 5.1 The Options Appraisal has confirmed that there is a benefit to recovering heat as well as electricity from waste. However, the Waste Policy Review acknowledges the challenges of developing heat users in parallel with energy from waste plants.
- 5.2 The Applicant recognises the benefits of heat use and has been investigating this for some time. The Applicant has commissioned a total of four studies over the past year, which have identified potential heat users in and around the Estate. There are a number of potential space heating users but limited users of process steam.
- 5.3 Fichtner have carried out a technical appraisal of the supply of heat to the Wienerberger brickworks, which is the subject of a Regulation 19 submission. We have concluded that the supply of heat to preheat combustion air at the brickworks is technically viable. It is also commercially viable, providing that the Renewable Heat Incentive is implemented.

6 Perception of Health Effects

- 6.1 WAIL mention, in paragraph 3.10 of their Statement of Case, that they consider *"there is genuine and significant public concern about the perceived health effects of emissions from the proposed development in this location"*.
- 6.2 Mr Roberts will present evidence on the significance which should be accorded to perception of health risks. Since I was responsible for the air quality and health chapters in the Environmental Statement, I have drawn attention to the methodology and conclusions on this matter.
- 6.3 The impacts of the Envirecover Facility on local air quality were assessed as part of the Environmental Impact Assessment using atmospheric dispersion modelling. The results of the modelling demonstrated that the impact of emissions on local air quality would be negligible. This was true at all local houses and at all protected habitats within 10 km of the site.
- 6.4 The potential for emissions of persistent pollutants to accumulate in the environment has also been assessed in the Environmental Statement. This assessment showed that the emissions from the facility were highly unlikely to have an adverse impact on human health.
- 6.5 The work carried out in the Environmental Statement demonstrated that the concerns expressed by local people are misplaced and illogical. The impact of the facility on human health and local air quality will be negligible.

7 Conclusions

- 7.1 In my evidence, I have demonstrated that the Envirecover Facility has a number of significant benefits in terms of sustainability.
- a) I have demonstrated that the Envirecover Facility would be defined as a Recovery Operation under the revised Waste Framework Directive, because the R1 Formula gives a result of 0.693, which is greater than the threshold of 0.65.
 - b) I have shown that national and European policy states clearly that generating energy from the biodegradable fraction of municipal waste is renewable energy.
 - c) I have demonstrated that the operation of the Envirecover Facility would reduce global emissions of carbon dioxide, due to the avoidance of landfill and the displacement of power generated from fossil fuels.
- 7.2 I have presented the results of an updated options appraisal, which considered nine different options for managing residual waste within Herefordshire and Worcestershire. This has confirmed that the Envirecover Facility is the preferred option, with or without a heat offtake.
- 7.3 In that context, I have confirmed that there is the potential for heat to be used on the industrial estate and provided an update on progress in developing heat users.
- 7.4 I have responded to two further points raised by WAIL in their statement of case:
- a) I have demonstrated that the Envirecover Facility is appropriately sized given the capacity of the plant.

- b) I have explained the assessment which I and my team carried out on air quality and health effects and confirmed that adverse impacts are highly unlikely.



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