



## **Climate Change, Air Quality, Health and Permit**

**Summary Proof of Evidence of Stephen Othen**

13 November 2023

APPEAL AGAINST THE REFUSAL OF AN APPLICATION FOR CONSTRUCTION OF  
AN ENERGY RECOVERY FACILITY WITH ANCILLARY BUILDINGS AND WORKS AT  
PORTLAND PORT, CASTLETOWN, PORTLAND DT5 1PP

PINS REF: APP/D1265/W/23/3327692

LPA REF: 20/00692/DCC

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## 1 Introduction

- 1.1 My name is Stephen Othen. I am the Technical Director of Fichtner Consulting Engineers Ltd. In section 1.1 of my proof of evidence, I explain my educational qualifications, the scope of my role and the experience of my company.
- 1.2 In section 1.2 of my proof of evidence, I explain that my proof does not directly relate to the reasons for refusal, but it provides supporting evidence for the planning balance (considered by Mr Roberts) as well as responding to concerns raised by the Rule 6 parties and other interested parties.

## 2 Technical Issues

- 2.1 In section 2 of my proof of evidence, I have updated the Inquiry on a number of technical changes to the plant.
- 2.2 At the time of the planning application, the power which could be exported from the ERF was limited by the capacity of the grid to 15.2 MWe. Since the planning application was submitted, it has become apparent that there are a number of power users at or near the port which can be supplied with power directly. This means that the ERF design can be optimised to export more power; I have conservatively based the revised assessments on exporting 17.1 MWe but I am confident that the ERF could be optimised to export up to 19.2 MWe.
- 2.3 It is also clear that there is a clear demand for exporting power to ships, specifically cruise ships and Royal Fleet Auxiliary ships, when they are moored in the harbour. These ships currently use their diesel engines to provide power when in port, so providing “shore power” would prevent both the use of diesel and the release of emissions from the engines.
- 2.4 I have explained that there is good potential for exporting heat to local users, particularly the two prisons on Portland, and for delivering a carbon capture plant in the future.

## 3 Climate Change

- 3.1 In section 3 of my proof of evidence, I have explained the climate change benefits of the Appeal Proposal. I have demonstrated that while the Appeal Proposal would lead to direct releases of carbon dioxide to the atmosphere from the combustion of waste, this is more than offset by displacing the release of landfill gas, containing methane, to atmosphere and by displacing the use of fossil fuel to generate electricity, particularly when taking account of shore power. I have also demonstrated that the Appeal Proposal leads to a reduction in overall greenhouse gas emissions when compared to the current baseline for residual waste in Dorset.
- 3.2 I have revised the carbon assessment submitted with the planning application to take account of more recent data on waste composition and greenhouse gas reporting factors. The revised carbon assessment is attached as Appendix SO3 and shows that the benefit of the Appeal Proposal would be at least 29,700 tCO<sub>2</sub>e/yr compared to landfill, increasing when shore power and district heating is taken into account. I have also carried out additional sensitivity calculations to demonstrate that the Appeal Proposal continues to have a net benefit on greenhouse gas emissions under a wide range of different assumptions.

- 3.3 I acknowledge that the benefits of the Appeal Proposal would change over time, as waste composition changes and the electricity generation mix changes and as shore power and district heating develop. Therefore, I have included an assessment of the carbon benefits over the life of the Appeal Proposal and shown that the overall lifetime benefit, under conservative assumptions, is 124,000 tCO<sub>2</sub>e compared to landfill and 276,900 tCO<sub>2</sub>e compared to the baseline for Dorset's residual waste.

## 4 Air pollution and health risks

- 4.1 In section 4 of my proof, I have summarised the results of the air quality assessment and human health risk assessment in the ES, both of which were prepared by my team. Dorset Council does not object to the air quality and health assessments but local people and their representatives have expressed concerns about the impacts of emissions to atmosphere.
- 4.2 The air quality assessment has shown that the impact of the Appeal Proposal, including traffic emissions and the operation of the emergency diesel generator, on local air quality will be negligible and not significant. The air quality assessment was based on conservative assumptions.
- 4.3 I have considered the benefits, in air quality terms, of displacing emissions from ships due to shore power, and I have updated the assessment on this issue to take account of the increased potential for shore power. I show that the net effect of the Appeal Proposal with shore power will be that concentrations of nitrogen dioxide and particulate matter across Weymouth and Portland will be lower, and that concentrations of sulphur dioxide will be lower in areas close to the harbour. I am not aware of any other ERF which has this benefit.
- 4.4 The human health risk assessment demonstrates that the emissions from the Appeal Proposal would not have an appreciable health risk.
- 4.5 I then explain the position of Public Health England (PHE). PHE's position remains that *"While it is not possible to rule out adverse health effects from modern, well regulated municipal waste incinerators with complete certainty, any potential damage to the health of those living close-by is likely to be very small, if detectable."* This position is supported by additional research commissioned by PHE from the Small Area Health Statistics Unit (SAHSU), which is based at Imperial College London and Kings College London, with the aim *"to extend the evidence base and to provide further information to the public about any potential reproductive and infant health risks from [energy from waste plants]."*
- 4.6 I have explained the impacts of emissions on ecological receptors. Mr Picksley has considered the ecological effects of these emissions.

## 5 Responses to third parties

- 5.1 I have responded to concerns raised by UKWIN, the Rule 6 party and MVV. These organisations have raised concerns about the impact on climate change and other technical concerns. These concerns are misplaced, as I explain in my evidence. I have also responded to some specific comments made by other interested parties.

## 6 Conclusions

- 6.1 The Appeal Proposal now has an increased efficiency, following some optimisation of the design and because a number of electricity users on or close to the port have been identified. Conservatively, the ERF would export at least 17.1 MWe and could export 19.2 MWe if sufficient users can be identified.
- 6.2 The Appeal Proposal would be carbon capture ready. Carbon could be captured from the flue gases, liquified and exported to offshore geological storage by ships from the port, which is not an option for any other potential ERF sites in Dorset.
- 6.3 I have demonstrated that the Appeal Proposal will lead to a reduction in greenhouse gas emissions by displacing landfill and the use of fossil fuels to generate electricity, and that this conclusion is robust to a wide range of sensitivities. I have also demonstrated that the Appeal Proposal would lead to a reduction in greenhouse gas emissions compared to the current management of residual waste in Dorset. The benefit of the Appeal Proposal will increase further by exporting power to ships moored in the port, as this would displace the use of diesel fuel.
- 6.4 I have also demonstrated that the Appeal Proposal will not have a significant impact on air quality and does not pose an appreciable risk to human health. This is consistent with other ERFs. However, exporting power to ships moored in the port would enable those ships to switch off their engines while in port, reducing emissions of pollutants. As a result, there would be a net reduction in concentrations of nitrogen dioxide and particulate matter across Weymouth and Portland.
- 6.5 On the basis of my evidence, and the other evidence presented to the Inquiry on behalf of the Appellant, I respectfully ask the Inspector to grant planning permission for the planning application.

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