

Indaver Rivenhall IWMF DCO

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## ES CHAPTER 4: ALTERNATIVES

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Indaver Rivenhall Ltd

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## 4 Alternatives

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### 4.1 Introduction

- 4.1.1 This chapter of the ES describes the reasonable alternatives that were considered by the Applicant during the evolution of the Proposed Development.
- 4.1.2 Regulation 14(2)(d) of the EIA Regulations<sup>1</sup> requires *'a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects'*. This principle is also reflected in Advice Note 7<sup>2</sup>.
- 4.1.3 Paragraphs 4.4.1 and 4.4.2 of NPS EN-1<sup>3</sup> and Paragraph 4.2.12 of the Draft Overarching NPS EN-1<sup>4</sup> states that *'this NPS does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option. However, applicants are obliged to include in their ES, as a matter of fact, information about the main alternatives they have studied. This should include an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic effects and including, where relevant, technical and commercial feasibility'*. The consideration of alternatives is addressed in a similar manner in Paragraphs 4.2.11 and 4.2.12 of the Draft Overarching NPS EN-1.
- 4.1.4 In accordance with the EIA Regulations, NPS EN-1, Draft Overarching NPS EN-1 and relevant guidance, this chapter describes the reasonable alternatives to the Proposed Development considered by the Applicant during the current design process and provides a description of the main reasons for the choice made, including a comparison of the environmental effects if available. As outlined in NPS EN-1, matters of technical and commercial feasibility are also discussed where relevant.
- 4.1.5 The nature of the Proposed Development (being an extension to the Consented Scheme) meant there was relatively limited design evolution in comparison with an application for a new generating station. The design of the Proposed Development was directed by the design of the Consented Scheme and in particular the inlet control valves. During the project programme and consultation process, the design of the Proposed Development was kept under review to ensure it reflects relevant consultation feedback.
- 4.1.6 The alternatives that are considered in this chapter include:
- Implementation of the Consented Scheme (i.e. 'the 'Do Nothing scenario');
  - An electricity generation capacity for the Proposed Development less than that proposed to be assessed in the ES (i.e. less than 60MW); and
  - An electricity generation capacity for the Proposed Development greater than that proposed to be assessed in the ES (i.e. greater than 65MW).

## 4.2 Need for the Proposed Development

- 4.2.1 There is a substantial body of evidence and policy in support of the national needs for new low carbon energy generation facilities. The need for new electricity generation capacity of all types is set out in government policy (NPS EN-1). Paragraphs 2.2.16 - 2.2.19 set out that the Government is implementing a variety of reforms to promote investment to replace ageing coal-fired and nuclear power infrastructure with safe, secure, affordable and increasingly low carbon supplies of energy. Draft Overarching NPS EN-1 expands on this need and reform to meet the Government's target of net zero carbon by 2050.
- 4.2.2 Paragraph 3.1.3 of NPS EN-1 explains that the Planning Inspectorate should *'assess all applications for development consent for the types of infrastructure covered by the energy NPSs on the basis that the Government has demonstrated that there is a need for those types of infrastructure and that the scale and urgency of that need is as described for each of them in this Part'*.
- 4.2.3 The important role of energy generation from EfW plants in addressing these needs is outlined in paragraphs 3.4.3 – 3.4.5 of NPS EN-1; this is expanded upon in paragraphs 3.3.34 – 3.3.39 of Draft NPS-EN1. EfW is a partially renewable form of generation, as the principal purpose of the combustion of waste (as fuel) is to reduce the amount of waste going to landfill in accordance with the Waste Hierarchy and to recover useful energy from that waste. The Proposed Development does not seek consent for additional throughput or combustion of waste.
- 4.2.4 The uplift in generating capacity enabled by the Proposed Development would be achieved without increasing the carbon emissions of the IWWMF. The additional power generated would reduce the need for power to be generated elsewhere in the UK. In the case of an EfW plant, such as the part of the Consented Scheme affected by the Proposed Development, the displaced electricity would likely be the marginal source, which is currently gas-fired power stations. For further detail, see **ES Volume 1, Chapter 7: Climate Change and Greenhouse Gases (Doc Ref: 6.1)**.

## 4.3 Implementation of Consented Scheme

- 4.3.1 This scenario comprises the *'Do Nothing'* scenario. This scenario would still lead to the Consented Scheme being built and becoming operational but would not maximise the potential efficiency and energy generation of the Consented Scheme that the new technology offers.
- 4.3.2 As a result of technological advances since the grant of planning permission for the Consented Scheme, the turbine to be installed under the Consented Scheme has the potential to deliver electricity generation greater than 49.9MW from the same fuel throughput. However, the generation of electricity under the Consented Scheme will be limited to 49.9MW through the installation of mechanical stops in the inlet control valves and through the use of specific software controlling the amount of steam directed to the turbine. Delivery of the *'Do Nothing'* scenario would remove the opportunity to deliver an increase in electricity generation capacity from the same fuel throughput associated with the Proposed Development.

- 4.3.3 The environmental effects of the Proposed Development set out in this ES would not occur, but the beneficial effects would also not be realised, which comprise the greater plant efficiency and additional energy generation, and beneficial climate change impacts. Combined-cycle gas turbine (CCGT) generating stations are the primary flexible electricity source at national level. EfW plant turbines produce electricity from low-carbon sources relative to CCGT generating stations. As such, implementation of the Consented Scheme would lead to an increase of percentage contribution of low-carbon electricity generation to the grid compared to its absence and associated reduction in carbon emissions, but this contribution would be less than the Proposed Development which would have a higher electricity generation from the same amount of fuel.

## 4.4 Increased Electricity Generation

### Less than 60MW

- 4.4.1 An increase of proposed electricity generation greater than 49.9MW but less than 60MW could be achieved by removing the limitations on the inlet control valves.
- 4.4.2 The scenario of seeking an increase in electricity generation of less than 60MW would not deliver the full potential gain in efficiency and associated increase in electricity generation capacity from the Consented Scheme as amended by the Proposed Development. This is not considered a reasonable alternative by the Applicant.

### Greater than 65MW

- 4.4.3 The turbine proposed to be installed under the Consented Scheme has a maximum output potential. To generate electricity greater than 65MW a larger turbine and generator is likely to be required. This would require a significant change to the consented building envelope.
- 4.4.4 In order to operate efficiently, the larger turbine would also require more throughput of fuel to increase the generating output, thereby requiring an increased number of HGV trips delivering the waste. This would have indirect negative air quality and noise effects, with the larger turbine and building potentially having negative noise and vibration and landscape and visual impacts once operational. It is not considered a reasonable alternative by the Applicant.

## References

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<sup>1</sup> Her Majesty's Stationary Office (HMSO), 2017. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. The Stationary Office. May 2017.

<sup>2</sup> Planning Inspectorate, 2020. Advice Note 7: Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements. June 2020.

<sup>3</sup> Department for Energy and Climate Change, 2011. Overarching National Policy Statement for Energy (EN-1). July 2011.

<sup>4</sup> Department for Business, Energy and Industrial Strategy, 2022. Draft Overarching National Policy Statement for Energy (EN-1). February 2022.

