

REPORT

Boston Alternative Energy Facility - Preliminary Environmental Information Report

Chapter 4 Site Selection and Alternatives

Client: Alternative Use Boston Projects Ltd

Reference: PB6934-RHD-01-ZZ-RP-N-2004

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4 Site Selection and Alternatives

4.1 Introduction

4.1.1 This chapter details the rationale behind the selection of the site for the Facility and the approach to determining the proposed technology and the size and scale of the Facility.

Environmental Impact Assessment Regulations

4.1.2 The Infrastructure (Environmental Impact Assessment) Regulations 2017 ('EIA Regulations') state that an Environmental Statement (ES) should include:

'A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, 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.'

4.1.3 The final ES will fulfil the requirements of the EIA Regulations through identifying the reasonable alternatives considered by the developer and explain the main reasons for the choices made (to the extent that reasonable alternatives were considered).

4.1.4 This Preliminary Environmental Information Report (PEIR) identifies the considerations of alternatives that have been made to date, including changes to the scheme following the first two phases of consultation. The final ES will conclude the assessment of reasonable alternatives following the end of the third phase of consultation (see **Chapter 7 Consultation** for details on consultation phasing).

4.2 Policy consideration

National Policy Statement EN-1

4.2.1 NPS EN-1 does not contain a requirement to consider alternatives. However, it is noted (Paragraphs 4.4.1 and 4.4.2) that applicants are obliged to include in their ES information about the main alternatives they have studied including the main reasons for the choice taking account of environmental, social and economic effects including where relevant, technical and commercial feasibility.

National Policy Statement EN-3

4.2.2 This section provides information on how these factors have been considered

when selecting the Application Site for development, however in accordance with paragraph 2.1.3 of NPS EN-3:

“It is for energy companies to decide what applications to bring forward and the Government does not seek to direct applicants to particular sites for renewable energy infrastructure...”

4.2.3 NPS EN-3 also identifies (Para 2.5.25) that transport infrastructure is another determining factor, in that:

“Government policy encourages multi-modal transport and the IPC [PINS] should expect materials (fuel and residues) to be transported by water or rail routes where possible”. It also states, “Applicants should locate new biomass or waste combustion generating stations in the vicinity of existing transport routes wherever possible.”

4.2.4 Furthermore, relating to grid connections, NPS EN-3 states (para 2.5.23):

“Applicants will usually have assured themselves that a viable grid connection exists”, and “any application to the [decision maker] must include information on how the generating station is to be connected and whether there are any particular environmental issues likely to arise from that connection”.

4.3 Scoping responses

4.3.1 One response relevant to the consideration of alternatives was received through the EIA scoping exercise. Boston Borough Council (2018) identified that it would like more information regarding:

“Justification of the proposed wharf so close to residential properties across the river. Why is the wharf not located towards the mouth of the river away from residential properties.”

4.3.2 The suitability of the Application Site is addressed below.

4.4 Site Suitability

4.4.1 For the following factors, the Applicant considers the Application Site to be highly advantageous and the consideration of alternative sites was not considered necessary:

- the location is directly adjacent to a navigable watercourse;
- the location benefits from being allocated within the development plan as a waste management area (including for the generation of power by energy

recovery) as well as part of the Riverside Industrial Estate which is allocated for employment uses;

- the location has the significant benefit of an existing on-site grid connection;
- the Applicant has the benefit of experience and history in the development of power generation in Riverside Industrial Estate, having secured planning permission for the adjacent gasification plant which is now being developed by Aviva Investors;
- the Applicant has strong and established links with the sole onshore landowner where the proposed Facility will be located. As a result, the Applicant has been able to secure the land and rights necessary to construct and operate the Facility and no further third-party land / rights acquisitions will be required. The other landowner is the Crown Estate up to mean high water springs.

4.4.2 These factors are considered further below.

Land Allocation

4.4.3 As described in **Chapter 3 Policy and Legislation**, the adopted Lincolnshire Minerals and Waste Local Plan Site Allocations document, adopted in December 2017 identifies the Application Site as falling within 119 ha of land allocated as WA22-BO: Riverside Industrial Estate Waste Area. The accompanying Sustainability Appraisal undertaken for the 'Site Locations' report confirms that the site is suitable for potential waste uses including, Energy from Waste projects. See **Plate 4.1** below for the allocation taken from the Lincolnshire Minerals and Waste Local Plan.

**WA22-BO Riverside Industrial Estate, Boston
Development Brief**

Grid Reference: E 533482 N 342188

District: Boston Borough Council

Parish: Boston

Area of Site: 119 ha

Potential Uses: Resource Recovery Park, Treatment Facility, Waste Transfer, Materials Recycling Facility, Household Waste Recycling Centre, Metal Recycling / End of Life Vehicles, Re-Use Facility, C&D Recycling, Energy Recovery

WA22-BO Riverside Industrial Estate

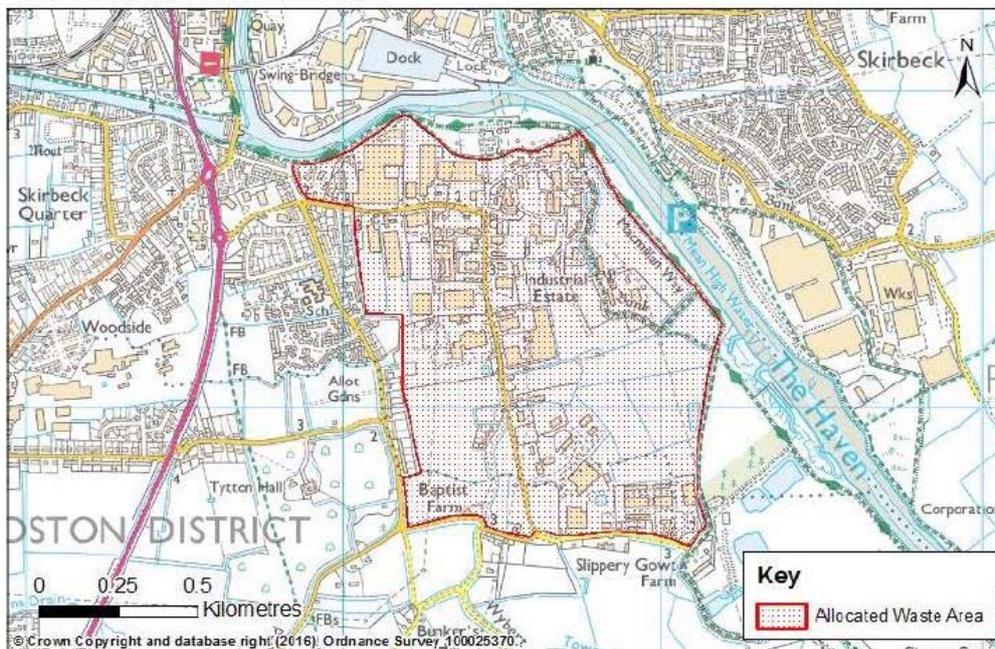


Plate 4.1 Riverside Industrial Estate Land Allocation. Source:

<https://www.lincolnshire.gov.uk/residents/environment-and-planning/planning-and-development/minerals-and-waste/>

- 4.4.4 The South-East Lincolnshire Local Plan (March 2019) identifies 89.7 ha of land as BO006 within the Riverside Industrial Estate, allocated for the purposes of Business (B1), General industrial (B2) and Storage or distribution (B8). Approximately 119 ha of the Application Site fall within this Local Plan allocation, with the remainder designated as Countryside. See **Plate 4.2** for the relevant section of the Policies Map from the South-East Lincolnshire Local Plan.

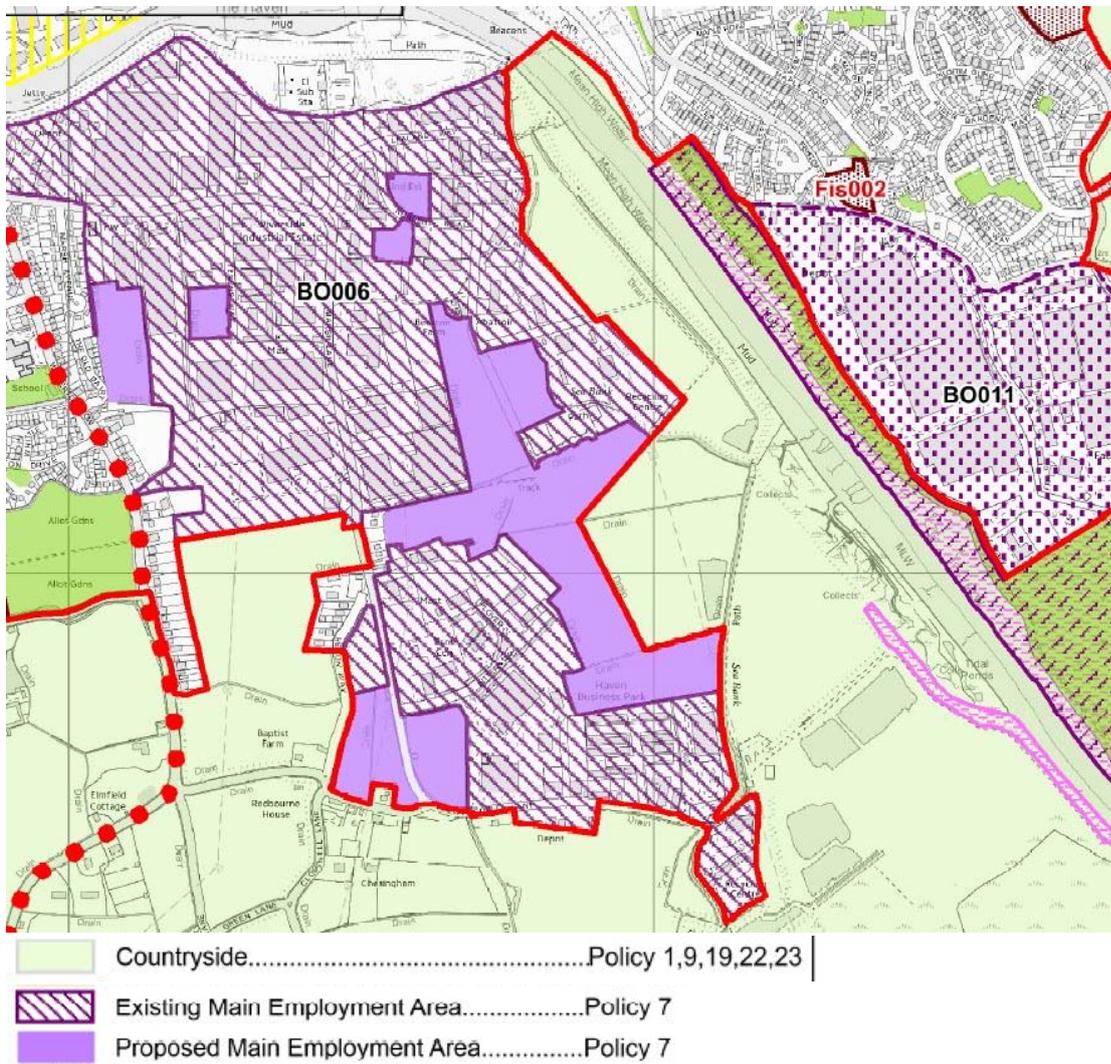


Plate 4.2 Land allocation South-East Lincolnshire Local Plan (March 2019) Source: <http://www.southeastlincolnlocalplan.org/wp-content/uploads/2019/02/1-Boston.pdf>

Locale

4.4.5 The Application Site locale affords several benefits to a development of this nature. The location directly adjacent to a navigable watercourse provides a means of delivery of RDF, import of clay and export of aggregate material by river, which significantly reduces the amount of vehicle trips which would otherwise be required for a facility of this scale, limiting trips to those of raw material import and export of carbon dioxide.

4.4.6 There is adequate footprint to accommodate the construction and subsequent operation of required plant and equipment for the Facility.

- 4.4.7 It is technically feasible to connect to the electricity distribution network on site. This avoids the need for intrusive works required to connect to an off-site grid connection and avoids any additional environmental impact from the installation of this infrastructure.
- 4.4.8 The Application Site is not directly situated within any environmental designation. It is within Flood Zone 3 associated with tidal flood risk, however it benefits from flood defences, which will be upgraded with the Haven Banks project as described in **Appendix 13.2 Flood Risk Assessment**.
- 4.4.9 The Application Site is located within an existing urban/industrialised environment and situated adjacent to an existing biomass gasification plant.
- 4.4.10 The Application Site falls within the control of a one landowner and the Crown Estates (up to mean high water springs).
- 4.4.11 Boston Borough Council in their response to the Scoping Report (as shown above) sought clarification with respect to possibly locating the proposed wharfage closer to the mouth of the river. The following points are noted:
- The wharf needs to be located on the same site as the proposed plant equipment to avoid multiple handling of the RDF; and avoid the requirement of road movements to move the RDF bales from the wharf to the site. A major benefit of delivering the feedstock by ship is to reduce road traffic movements that would otherwise be required to move the quantity of material from a wharf facility at the mouth of the river, the power-generation facility at the Riverside Industrial Estate.
 - The mouth of the river is at The Wash. The Wash has several significantly sensitive environmental designations (for example The Wash and North Norfolk Coast SAC, The Wash SSSI, The Wash Ramsar, The Wash SPA, The Wash NNR). Therefore, if the wharf was closer to the mouth of the river it would be within or directly adjacent to such environmentally designated sites.
 - The road network is inadequate close the mouth of the river. So, further road infrastructure would be required to be developed, which would be in an area of open countryside.
 - The area close to the mouth of the river is not allocated for industrial development in the Lincolnshire Minerals and Waste Local Plan.
- 4.4.12 Overall, bearing in mind the above, the Application Site is available and appropriate and alternative sites in the similar area, regardless of availability are

less preferable from a planning and development perspective.

4.5 Alternative Layouts and Design

4.5.1 The need for the Facility is addressed by **Chapter 2 Project Need**. The Applicant is mindful of the current waste situation in terms of overseas recovery/disposal of residual household waste; the impact of the restrictions or bans on imports to far eastern networks (for example China) and the dwindling landfill capacity. This situation, compounded with the proximity principle, requiring waste to be disposed of, or recovered in one of the nearest appropriate installations, was a key driver for the Applicant to seek to divert as much currently exported or landfilled RDF as possible; and to develop the cleanest, most efficient gasification facility possible. The Facility will also conform with NPS EN-3 as there will be recovery of energy from waste in accordance with the waste hierarchy.

4.5.2 The considerations for choice of technology were influenced by:

- Technology that is capable of beneficially recovering renewable energy from RDF that would be otherwise exported or sent to landfill;
- Transport;
- The national policy objective of zero waste to landfill;
- Potential for CO₂ capture for reuse;
- Available site footprint; and
- Economy of scale.

4.5.3 The scale of development is dictated by the best available technology that could be accommodated within the available land to process the desired amount of fuel. The system consideration starts with the availability of the fuel; and the principle concept was to design to process 1,000,000 tonnes per year, at 125 tonnes per hour of prepared RDF (with an indicative annual operational capacity of 8,000 hours) for feedstock to the process.

4.5.4 This starting point, combined with the land availability and an indicative reference-point calorific value for the RDF from the suppliers of 11.2 MJ/kg at 125 tonnes/hour, led to an indicative power output of 102 MWe.

4.5.5 Three gasification lines were proposed to offer the most efficient long-term operation that will deliver power 24/7; and will enable two lines to remain in operation whilst one is undergoing planned annual, or unplanned, maintenance or repair.

- 4.5.6 Gasification was chosen as the optimal power generation facility for RDF because it delivers a higher efficiency compared with direct incineration and therefore power per square metre of site footprint. As an example, a large incinerator-based EfW system operating using 700,000 tonnes of fuel generates approximately 71 MWe processing feedstock at 87.5 tonnes/hour but occupies the same site footprint as the Proposed Facility, which can process 125 tonnes/hour and deliver 102MWe.
- 4.5.7 The Application Site shape dictates the arrangement of the main gasification units given that this plant has the largest combined footprint.
- 4.5.8 The site layout has been optimised for the proposed development to enable the movement of waste throughout the facility to the gasification plant. The aggregate facility is positioned next to The Haven to facilitate export of lightweight aggregate and import of the clay for use in the process. The approximate location of the gasification facility; the lightweight aggregate facility and the proposed wharf have been essentially fixed by the site boundary.

4.6 Do Nothing Alternative

- 4.6.1 Were development not to take place, then the Application site would be available for some other form of waste management related development in accordance with the adopted Lincolnshire Minerals and Waste Local Plan (2017). Part of this area is also allocated for B1, B2 and B8 development as set out within the South-East Lincolnshire Local Plan (2019). If the Facility were not developed then there would be opportunity for some other form of development to be undertaken in accordance with the development plan.
- 4.6.2 The 'Do Something' scenario is considered preferable given the established need for new energy generation in the UK, including a need for low carbon and renewable energy generation and for improved waste management capacity, and policy support via NPS EN-3 for increased use of transport other than by road.
- 4.6.3 Additionally, a 'Do Nothing' scenario would prevent this additional investment in the local economy, removing the opportunity to generate diversity in employment use, a lack of such a facility that provides potential for skilled engineering workforce; as well as strengthening resilience of the local power network.

4.7 References

Alternative Use Boston Projects Limited (2018). Boston Alternative Energy Facility Scoping Report. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010095/EN010095-000013-BAEF%20Scoping%20Report.pdf> [Accessed 25/03/2019]

Boston Borough Council (2018). Proposed Alternative Energy Facility – Scope of Environmental Statement. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010095/EN010095-000019-BAEF%20-Late%20Response%20-%20Boston%20%20Borough%20Council.pdf> [Accessed: 25/03/2019].

South-East Lincolnshire Joint Strategic Planning Committee (2019). Available at: <http://www.southeastlincslocalplan.org/> [Accessed: 04/02/2019].