



Portland  
energy recovery  
facility

Incinerator bottom ash (IBA) paper  
August 2021





# **Powerfuel Energy Recovery Facility (ERF)**

## **Incinerator Bottom Ash (IBA) Paper**

**Response to request for additional detail in respect of IBA transport options (Q24) received from Dorset Council on 30 April 2021**

**August 2021**

## **Contents**

<b>1.</b>	<b>Introduction</b>	<b>3</b>
<b>2.</b>	<b>Context</b>	<b>4</b>
<b>3.</b>	<b>Transport by Sea - Process</b>	<b>5</b>
<b>4.</b>	<b>Transport by Sea – Export Options</b>	<b>6</b>
<b>5.</b>	<b>Conclusion</b>	<b>7</b>
<b>6.</b>	<b>Appendix – IBA Processing Facilities Accessible by Vessel</b>	<b>8</b>

## 1. Introduction

- 1.1. The purpose of this report is to provide responses to questions raised in the letter dated 30 April 2021 issued by Adrian Lynham on behalf of Dorset Council (the **Request**).
- 1.2. The points addressed in this paper are in relation to the Traffic section of the Request (point 24), included below for convenience:
  - 1.2.1. **Request point 24:** Further clarification in respect of opportunities to export of IBA by sea, including the identification of specific sites that could accept the material when transported using this method.

## 2. Context

- 2.1. Incinerator Bottom Ash (IBA) is a non-hazardous by-product of the ERF process and represents 15-20% of the total input material by weight.
- 2.2. Powerfuel has committed to recycling the IBA produced at the proposed ERF to reduce the carbon footprint of the process.
- 2.3. The IBA that is discharged from the combustion chamber will be cooled and collected in a dedicated storage area. It will then be transferred to a dedicated reprocessing facility where it can be re-used as a secondary aggregate for use in the construction industry as a material known as Incinerator Bottom Ash Aggregate (IBAA). IBAA is more cost-effective and environmentally friendly than quarried (primary) aggregate.
- 2.4. IBA processing facilities are specialist facilities designed to aggregate material and operate at a scale that is commercially economic. There is currently no local ability to process the IBA and therefore the most practical option is to transport the IBA off-site to an existing reprocessing facility.
- 2.5. Powerfuel's current intention is to transport the IBA by boat, rather than road, to an existing facility operated by the Day Group at Greenwich, London using the existing port infrastructure.
- 2.6. Transport by sea (as opposed to by road) will require additional processes to be put in place to ensure safe transfer but this is not a new concept.
- 2.7. Powerfuel has identified over 20 potential UK processing plants in the UK, four of which could accommodate IBA via sea transport. In addition, Powerfuel has identified a further six potential port located facilities in Northern Europe that could potentially accept IBA from the proposed ERF.
- 2.8. Opportunities may arise in the future for IBA processing facilities to be developed on Portland which would provide a local solution. This could be particularly relevant where waste aggregate from quarrying could play a substantial role and Powerfuel Portland would consider options for managing IBA at a more local facility should this become available.
- 2.9. In the event that a local facility is not available and movement by boat is not possible then the option of movement by road to an existing processing facility (likely at Avonmouth) would be used. The EIA transport assessment assumes the worst-case scenario of road based export.

### 3. Transport by Sea - Process

- 3.1. The IBA that is discharged from the combustion chamber will be cooled and collected in a dedicated storage area. Where an ERF is not located at a port and does not have onsite facilities the cooled IBA is then transferred to heavy goods vehicles and transported to reprocessing facilities.
- 3.2. In the case of removal by ship, the IBA will be loaded into a sheeted trailer and transported by truck to the quayside (approximately 50m from the proposed ERF). The IBA will then be loaded onto large dedicated purpose vessels using a mechanical grab machine.
- 3.3. Prior to the vessel berthing, details of the berth will be approved by the Harbour Master of the port with a specific note of the tidal range and height of the quay in relation to the position and reach of the ship-based materials handler to access the cargo on the quay.
- 3.4. The Ships Master will oversee the ship operations supported by a materials handler operator on the vessel. All crew will be qualified and trained as appropriate to their rank and responsibilities onboard.
- 3.5. A banksman on the quayside will assist the delivery trucks and maintain the safe operation of the exclusion zone where the mechanical grab will operate. To ensure grab operations do not conflict with the delivery trucks the banksman will communicate with the materials handler operator on the vessel.
- 3.6. The management of the quayside operation remains the responsibility of the Port. This includes carrying out the necessary risk assessment regarding the movement of trucks and load-bearing capacity of the quay.
- 3.7. Once the vessel has been loaded, bi-fold doors will close over the top for protection and to prevent any escape of material. Any spillage of the inert IBA would be dealt with promptly and appropriately.
- 3.8. The process is highly regulated and all parties will need to ensure that compliance is achieved with existing legislation including:
  - International Convention for Safety of Life at Sea (SOLAS) Chapter XI-2
  - International Ship and Port Facility (ISPS) Code
  - Marine Guidance Note MGN 533 (M) Amendment 1 Means of access
  - Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997
  - Maritime and Coastguard Agency's (2014) Marine Guidance Note 512: Solid Bulk Cargoes and Lloyd's Register
  - UK P&I Club and Intercargo (2016) Carrying solid bulk cargoes safely

## **4. Transport by Sea – Export Options**

### **Greenwich Facility Option**

- 4.1. The Day Group is an established aggregate provider to the UK construction sector, selling more than 5 million tonnes of aggregates each year, including almost a million tonnes of construction and demolition arisings and IBA. As a result the Day Group is one of the largest recycling companies in the UK.
- 4.2. Powerfuel has engaged with the Day Group over the past two years and has visited two of its facilities. It is a reputable potential IBA off-taker, that is already managing major contracts, including with other waste management companies such as Viridor and Veolia.
- 4.3. The Day Group own and operates a number of processing plants including a large facility located in Greenwich, London and has extensive experience of IBA transport by sea.
- 4.4. The Day Group has indicated that it would be willing to enter into a long term contract to enable IBA to be collected from the proposed ERF by vessel and transported to its site at Greenwich. Based on discussions to date, Powerfuel Portland is confident that appropriate commercial terms could be agreed.

### **Other Potential Facilities**

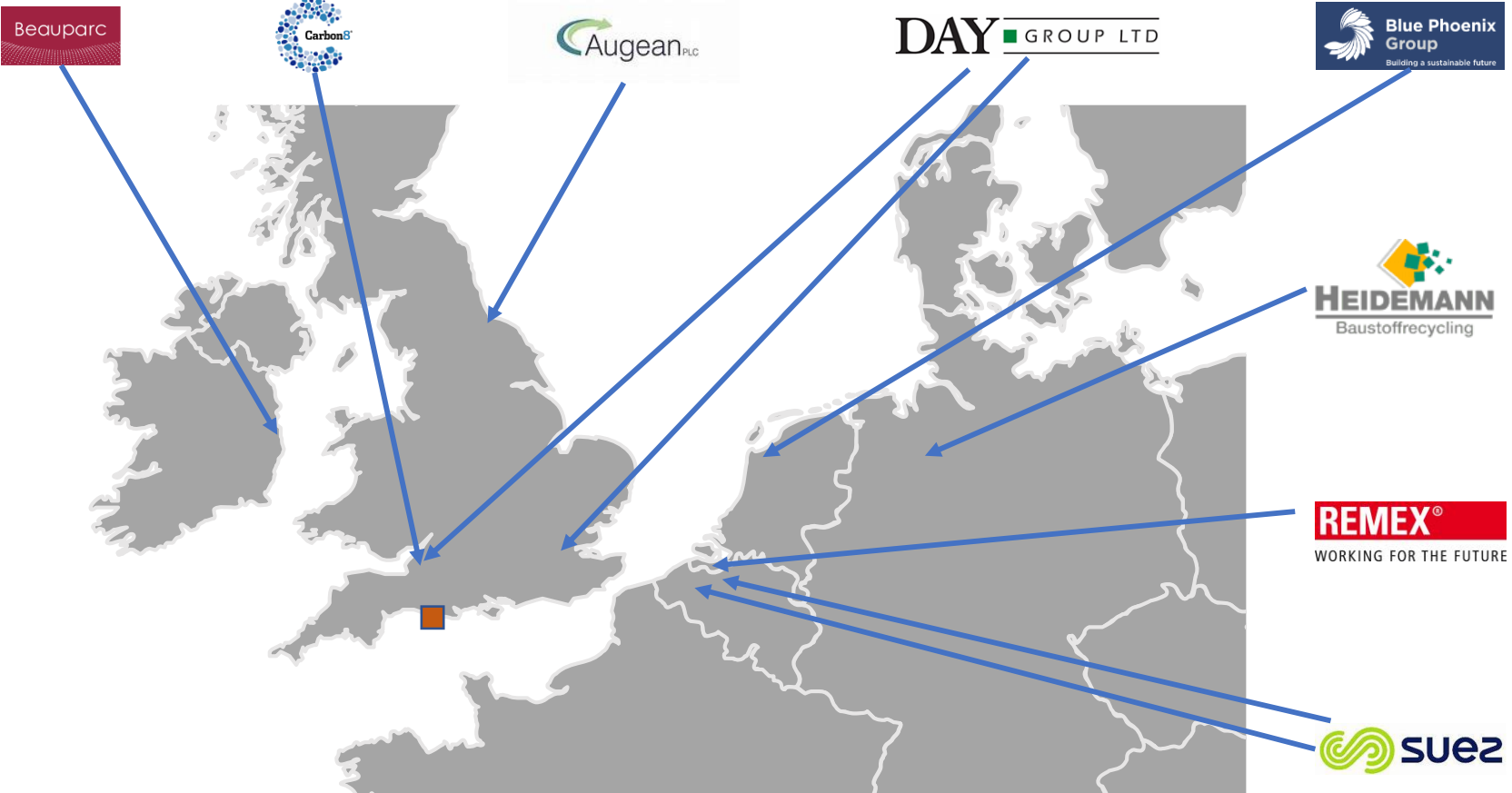
- 4.5. Powerfuel Portland expects to be able to agree commercial terms with the Day Group and export IBA produced by the proposed ERF to the facility located at Greenwich, London.
- 4.6. However, if this is not possible there are a number of other UK and Northern Europe processing sites that could be used to export the IBA from Portland by sea and therefore reduce the overall traffic impact of the proposed ERF.
- 4.7. A summary of these facilities is included in the Appendix.

## 5. Conclusion

- 5.1. IBA is a non-hazardous by-product of the ERF process and represents 15-20% of the total input material by weight.
- 5.2. Whilst inland ERFs have no option but to transfer IBA from the project to processing facilities by road, the proposed ERF has the potential to transfer by sea and therefore reduce the overall traffic impact.
- 5.3. Transport of IBA by sea is not uncommon and there are existing regulations and developed processes in place to allow this to be achieved safely with no additional environmental risks.
- 5.4. Powerfuel Portland has advanced discussions with the Day Group to allow for transfer of IBA produced at the proposed ERF to its facility located at Greenwich, London. The Day Group is a reputable and credible reprocessing operator and has experience in transporting IBA from other ERFs by sea.
- 5.5. In the event that commercial agreement cannot be reached with the Day Group there are a number of other facilities that are accessible by sea that could be used for export of the proposed ERF IBA output, without any additional local traffic impact.



# 6. Appendix – IBA Processing Facilities Accessible by Vessel



#	Operator	Country	Address
1	Augean	UK	Off Huntsman Drive, Port Clarence, Middlesbrough, TS2 1UE
2	Carbon8	UK	Off Central Avenue, Hallen, Avonmouth, BS10 7SD
3	Day Group	UK	King Rd Avenue, Avonmouth, BS11 9DQ
4	Day Group	UK	Murphy's Wharf, Lombard Wall, London, SE7 7SH
5	Beuparc	Ireland	Beuparc Business Park, Rathdrinagh, Navan, Co. Meath, Ireland
6	Blue Phoenix Group	Netherlands	Nauerna 1, 1566 PB Assendelft, Netherlands
7	Heidemann	Germany	Beim Industriefafen 39, 28237 Bremen, Germany
8	Remex	Netherlands	Oostkade 5, 4541 HH Sluiskil, Netherlands
9	Suez	Belgium	Westvaardijk 83, 1850 Grimbergen, Belgium
10	Suez	Belgium	Molenweg, 9130 Beveren, Belgium