



Portland
energy recovery
facility

Waste need paper
August 2021





Powerfuel Energy Recovery Facility (ERF)

Waste Need Paper

Response to request for additional detail in respect of Need (Q30, Q31, Q32) received from Dorset Council on 30 April 2021

August 2021

Contents

1.	Introduction	3
2.	Context	4
3.	Q30: Catchment Area, Alternative Treatment Facilities and RDF Production/Supply	6
4.	Q31: Potential Impact of Proposed RDF Operation at Eco Sustainable Solutions	15
5.	Q32: Impact of European Market Development and Potential Future Export Issues	17
6.	Appendix 1 – Beauparc Letter of Intent	23
7.	Appendix 2 – Geminor Letter of Intent	26

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 Need section of the Request (points 30, 31, and 32), included below for convenience:
 - 1.2.1. **Request point 30:** Further clarification and explanation in respect of potential alternative treatment facilities within three hours drive by road, in respect of the need for the capacity the facility provides. Further detail in respect of likely sources of the RDF proposed to be managed should be provided, which should have regard to existing contracts for the management of RDF which are in place with competing facilities.
 - 1.2.2. **Request point 31:** Further detail in respect of the potential impacts (or lack of) of your proposal upon the potential delivery of an RDF operation at Eco Sustainable Solutions, should the planning authority be minded to grant planning permission for it.
 - 1.2.3. **Request point 32:** Further detail in respect of the impact of the development on the future process of RDF in mainland Europe, and future issues surrounding exporting UK waste to these facilities. The information provided should include discussion of the likely differences in respect of overall efficiency between the proposed plant and those plants in mainland Europe for which it may compete in relation to future feedstock.

2. Context

- 2.1. This paper should be read in conjunction with information previously supplied as part of this planning application, in particular Section 4 of the Planning Supporting Statement (Need) and the Waste Need Statement (including the independent analysis produced by ERM appended to this statement).
- 2.2. Whilst we do not feel it generally productive to repeat data and results previously supplied, we believe it may be helpful to provide some high level context upfront confirming the need for the proposed ERF. We do not believe there is any disagreement with Dorset Council on the waste volume statistics below.
- 2.3. In July 2020 ¹ Dorset Council reaffirmed total Dorset waste arisings remained consistent with the figures used in the extant Waste Plan adopted December 2019.

“At present, Dorset (including Bournemouth, Christchurch and Poole) generates 1.6 million tonnes of waste each year. Estimated trajectories in the Dorset Waste Plan predict this figure will continue to grow. Nearly half of Dorset’s waste is categorised as either construction, demolition, excavation or hazardous. And the remaining 52% (around 840,000 tonnes) is split between household waste and commercial & industrial waste.”

- 2.4. Post recycling and other management Dorset produces approximately 321,000 tonnes of residual waste per annum. Dorset has no remaining operational landfill capacity and no energy recovery facilities to manage its residual waste volumes. As a consequence Dorset ultimately exports its residual waste arisings and relies on other areas to process it, which is a situation that has been ongoing for several years.
- 2.5. The Planning Inspector’s report ² (paragraph 25) on the Bournemouth, Dorset and Poole Waste Plan recognises the aim to:

“...facilitate the treatment of an increased tonnage of waste to enable increased recovery within the County, instead of transporting waste to landfill or recovery facilities outside of Dorset, as happens at present.”

- 2.6. The report (paragraph 56) further notes that:

“The provision of increase capacity for recycling and recovery within the Plan area will allow for waste to be treated higher up the waste hierarchy and in accordance with the proximity principle. A reduction in exports of wastes will be consistent with working towards self-sufficiency.”

¹ 15 July 2020 publication “Climate and Ecological Emergency Strategy”

² 31 January 2019 report by the Planning Inspectorate to Bournemouth Borough Council, Dorset County Council and the Borough of Poole

- 2.7. In addition to Dorset's existing practice of exporting residual waste outside of the county for treatment (and therefore being less well aligned with the self-sufficiency and proximity principles), this approach results in a higher carbon and cost impact (in both cases as a result of further distance) and an increased risk to Dorset given the out of county facilities will be under increasing pressure to receive waste produced closer to their facilities within their own local areas.
- 2.8. The existing export approach also has impacts for other parts of the South West. The South West landfills approximately twice the amount of waste than the UK average (in percentage terms) and utilises ERF processes for only 65% of the UK average level.
- 2.9. By not developing its own waste solution and relying on exporting its waste, Dorset is increasing the shortage of processing capacity in the South West, crowding out waste produced closer to existing facilities.
- 2.10. This results the export of Dorset's residual waste out of county, either to landfill or export to similar ERF facilities further away (and ultimately on a UK basis to Europe) resulting in increased costs and carbon impacts.
- 2.11. The use of residual waste as a fuel to generate energy within the proposed ERF would assist in the diversion of waste from landfill disposal and deliver waste management at a higher level in the waste hierarchy.
- 2.12. Relative to the current Dorset residual waste volumes of 321,000 tonnes annually the proposed ERF would process 180,000–200,000 tonnes per annum.
- 2.13. The Bournemouth, Dorset and Poole Waste Plan, Background Paper 3 projects that total waste arisings from LACW and C&I waste will increase by c. 20% from the existing 840,000 tonnes to 1,000,000 tonnes by 2033.
- 2.14. Even under the most bullish scenarios based on major societal behaviour change, strong Government policy, adherence to circular economy principles, and further significant increases in recycling (above the already high level in Dorset), there will clearly be sufficient volume of residual waste arising in Dorset during the life of the proposed ERF that will require a treatment solution.
- 2.15. The benefits provided by the development in the context of delivering sustainable waste management, in accordance with applicable law and policy, should be given significant positive weight in the overall planning balance.
- 2.16. Powerfuel recognises the benefit that the proposed ERF could provide to Dorset and would be pleased to discuss and agree a reasonably worded planning condition that would require the proposed ERF to give a priority to local waste arisings, subject to agreement of on-market commercial terms. See Section 5 of the Supplemental Planning Supporting Statement for further detail.

3. Q30: Catchment Area, Alternative Treatment Facilities and RDF Production/Supply

Catchment Area – Definition

- 3.1. Whilst it is anticipated that, over time, the majority of the RDF required for the proposed ERF will be produced within Dorset from waste arisings in Dorset, the proposed ERF is a merchant plant and therefore does not have the certainty of a long term contract with Dorset.
- 3.2. The capital cost of the proposed ERF is expected to be c. £95m. To provide comfort to finance providers Powerfuel commissioned a waste market analysis from Tolvik Consulting, regarded as a leading provider of independent market analysis and commercial due diligence to the European waste sector.
- 3.3. The Tolvik report contains commercially sensitive data but the headline findings of the market analysis, in terms of waste management requirements and available residual waste quantities, have been summarised as follows:
 - 3.3.1. Tolvik’s in-house Market Analysis Model – which itself has been developed from a range of publicly available data sources;
 - 3.3.2. DEFRA’s Annual Municipal Waste Management statistics;
 - 3.3.3. The Environment Agency’s Waste Data Interrogator tool; and
 - 3.3.4. EfW Annual Returns as provided by the Environment Agency.
- 3.4. Tolvik considered whether there is sufficient waste available within a defined catchment area, including by reference to the existing competing facilities and potential new facilities that are in various stages of development.
- 3.5. Tolvik concluded that a 3 hour HGV drive time was the most “natural” immediate market and provided a graphical representation of the catchment area as shown below.

Catchment Area



Catchment Area - Available Waste

- 3.6. The Tolvik assessment, adopting a median waste growth scenario, concluded that a total of approximately 910,000 tonnes of residual wastes would be available in the catchment area by 2035 that would be suitable for processing in a facility similar to the proposed ERF.
- 3.7. Of the total 910,000 tonnes, 570,000 tonnes is expected to be residual local authority collected waste and a further c. 340,000 tonnes is expected to be residual C&I wastes. In both cases these figures represent a c. 9% reduction from current levels, due to an assumed increase in recycling levels.
- 3.8. In addition, Tolvik estimates that between 195,000 and 310,000 tonnes of RDF is currently being exported from the UK and Ireland that passes in close vicinity to Portland. Processing this waste at the proposed ERF would result in carbon and cost benefits relative to the existing solution.

Catchment Area – Existing Treatment Facilities

- 3.9. There are four “*certain*” energy from waste facilities located in and near the catchment area, representing existing treatment facilities, that could theoretically compete with the proposed ERF.
- 3.10. The table below provides an overview of these facilities together with Tolvik’s analysis of the potential capacity impact on the proposed ERF catchment area.

Project	Location	Waste Contract Position	Owner	Capacity impact (tpa) for Portland Catchment
Marchwood	Hampshire	Long term local authority	Veolia	202,000
Chineham	Hampshire	Long term local authority	Veolia	49,000
Exeter	Devon	Long term local authority	Viridor	55,000
Bridgwater	Somerset	Merchant	Equitix / Iona	100,000
Other (e.g. MBT, co-incineration, landfill)				10,000
Total Existing Capacity				416,000

- 3.11. The Marchwood and Chineham facilities were developed under a 28-year public/private partnership contract between Veolia, Hampshire County Council

and the two unitary authorities of Southampton City Council and Portsmouth City Council known as Project Integra. They are not “merchant” facilities, unlike the proposed ERF.

- 3.12. The development of these facilities has allowed Hampshire to process the vast majority of its waste arising within the county. The Hampshire plants were procured and funded by the local authority and priority is given to Hampshire source waste over other authority areas to ensure that these facilities continue to present a solution for Hampshire for the remainder of the 28 year contract length. The Hampshire plants operate at close to full capacity and there is very limited merchant capacity for non-Hampshire local authority or residual C&I waste – therefore including this tonnage in the analysis is conservative since it will not be able to meaningfully serve Dorset needs.
- 3.13. Similarly, the Exeter project is not a merchant plant and was developed in partnership with Devon County Council to provide an in-county solution. Almost 100% of its waste is sourced from Devon County Council and the facility ownership reverts to Devon County Council at the end of its contracted term in 2050. The Exeter plant is not currently considered to be an ERF as it does not achieve R1 status due to its technology – as such in the waste hierarchy it holds an equivalent status to landfill. As with the Hampshire plants, the Exeter plant operates at close to full capacity and there is very limited merchant capacity for non-Devon local authority or residual C&I waste – therefore again, including this tonnage in the analysis is conservative since it will not be able to meaningfully serve Dorset needs.
- 3.14. The Bridgwater facility is different to the above facilities in that it, like the proposed ERF, is a merchant facility and does not benefit from a long term local authority waste supply contract.
- 3.15. Bridgwater has entered into a long term waste supply contract with Geminor, a leading exporter and supplier of RDF that manages more than 1,700,000 tonnes of feedstock per annum. Geminor has committed to supply up to 75,000 tonnes per annum to Bridgwater, with the 25,000 tonnes balance expected to be opportunistically sourced by the project from local arisings.

Catchment Area – Potential Treatment Facilities

- 3.16. In addition to the existing facilities there are a number of other potential projects under development in the catchment area that may, or may not, result in competition for the proposed ERF.
- 3.17. A summary of the projects we are aware of is provided below. Each of these would be merchant facilities, in a similar way to Bridgwater and the proposed ERF.

Project	Location	Capacity (tpa)	Status
Eco Sustainable Solutions, Bournemouth	Dorset	50,000 (residual waste)	Public consultation held in November 2020. Planning was submitted in March 2021
Hills Barton	Devon	87,600	Application approved for a new facility 25,000 tpa expected to be derived from an on site facility with 55,000 tpa from other commercial waste management facilities within the Exeter area and the remaining 7,600tpa sourced from outside the Exeter area.
Alton	Hampshire	330,000	Application submitted May 2020 for a new facility Anticipated to service non-local authority residual waste – in 2018 365kt of Hampshire waste was disposed of to landfill or exported to Europe. However, reference was also made to an expected 4.66Mt residual capacity shortfall in London and the South East in 2025.
Northacre	Wiltshire	243,000	Permission granted in June 2021 to modify an extant permission to amend from advanced thermal treatment (that benefitted from a Contract for Difference at c. £80/MWh) to moving grate on basis of uncertainly regarding technical viability and deliverability. 52ktpa is expected to be supplied from the Northacre RRC, with a further 130ktpa available from Wiltshire, Bath and NE Somerset, Bristol and South Gloucestershire and the balance expected to be supplied from a wider catchment area.

Catchment Area – Gap Analysis

3.18. The table below summarises:

- 3.18.1. the forecast residual local authority collected waste (**Residual LACW**) arisings in the defined proposed ERF’s catchment area;
- 3.18.2. the forecast residual C&I waste arisings in the catchment area;
- 3.18.3. the existing treatment capacity (i.e. energy recovery facilities or less efficient incinerators) in the catchment area; and
- 3.18.4. the assumed additional capacity from new treatment facilities in the catchment area.

Year	2025	2030	2035
Catchment Area – Residual Waste			
Residual LACW	590,000	580,000	570,000
Residual C&I Waste	360,000	350,000	340,000
Total Residual Waste in the Catchment Area (A)	950,000	930,000	910,000
Catchment Area – Treatment Capacity			
Existing capacity	416,000	416,000	416,000
Assumed additional capacity impact	200,000	200,000	200,000
Total Capacity in the Catchment Area (B)	616,000	616,000	616,000
Catchment Area Balance (“Capacity Gap”) – (A) less (B)	334,000	314,000	294,000

3.19. In the table above we have conservatively assumed that:

- 3.19.1. the Eco Sustainable Solutions project receives planning approval, is able to raise investment and is successfully delivered, processing 50,000 tonnes per annum;
- 3.19.2. the Hills Barton site is disregarded given the limited potential impact;
- 3.19.3. the Alton project is approved and built, with a 75,000 tonnes per annum impact on the available residual waste in the proposed ERF’s catchment area;
- 3.19.4. the Northacre project is built, with a 75,000 tonnes per annum impact on the available residual waste in the proposed ERF’s catchment area.

- 3.20. The analysis above demonstrates that, even under the assumption that all these facilities receive planning permission and are successfully delivered, which is by no means certain, there should be sufficient residual waste (post adjustment for increases in recycling levels) within the catchment area to supply a project that is over 1.5x the size of the proposed ERF.
- 3.21. Note, the above analysis assumes that 100% of the RDF feedstock is sourced from the terrestrial catchment area (i.e. it ignores the potential to use a portion of the 195,000 to 310,000 tonnes RDF that is currently being exported to mainland Europe and passes in close vicinity to Portland). If we assume a split of 25% arrival by sea and 75% by land (as per the planning application) then there is sufficient waste in the catchment area to supply a project that is over 2x the size of the proposed ERF.

RDF Supply

- 3.22. There is only one existing operational recovery facility in Dorset, the Canford Magna MBT (**Canford Magna**) which is co-located with a MRF and an inert recycling facility. The Canford Magna facility is owned and operated by the Beuparc group (**Beuparc**), also referred to as “New Earth Solutions”.
- 3.23. Dorset, Bournemouth and Poole have been sending residual waste to this facility for over 10 years. However, the majority of Dorset’s residual waste (i.e. volumes not sent to the Canford Magna facility), is exported out of the county for disposal at landfill sites in Somerset and Hampshire or sent for treatment at various EfW facilities. We understand the precise destination of Dorset exported arisings has varied over time, presumably as Dorset Council seeks best value treatment solutions across a range of landfill and EfW options outside of Dorset for waste produced within Dorset.
- 3.24. Beuparc has confirmed that the Canford Magna facility received 118,484 tonnes of residual waste in 2020 and, post processing, exported 82,017 tonnes of RDF to Europe.
- 3.25. Powerfuel has progressed commercial discussions with Beuparc, as the incumbent contractor processing a substantial volume of Dorset sourced waste at Canford Magna.
- 3.26. We note that Canford Magna was successful in extending its contracting arrangements with Dorset council in July 2020 for a further 6 years. At the time of the contract renewal, Managing Director Panda UK, New Earth Solutions (Canford) Ltd, commented:

“We are delighted to have been awarded the contract to continue managing Dorset’s waste for the next 6 years. The Group has had numerous discussions with Powerfuel regarding new UK based infrastructure for the processing of our

RDF which complements the existing, longstanding fuel supply arrangements with off-takers in Europe. If planning was to be achieved, Portland would provide the most efficient route to market to manage waste and generate energy.”

- 3.27. Beuparc has confirmed that its facility at Canford Magna produces RDF that is suitable for the proposed ERF and, if the facility was granted planning permission and built, Beuparc would expect to supply RDF from Canford Magna to the proposed ERF such that *“a large volume of the RDF supplied to the Portland Facility will be local source waste”*.
- 3.28. Further Beuparc confirms that *“the Portland facility would align well with Beuparc’s Dorset operations and provide the most efficient route to market to manage waste and generate energy”*.
- 3.29. A copy of the letter of intent from Beuparc is included in Appendix 1 (the **Beuparc Letter**).
- 3.30. Geminor has also confirmed that, subject to the proposed ERF receiving planning permission, it intends to enter into a similar supply contract with the Portland project, supplying the full volume of c. 180,000-200,000 tonnes per annum. Contractual terms for this fuel supply contract are well advanced and will be entered into subject to planning permission being awarded for the ERF. A copy of the letter of intent from Geminor is included in Appendix 2 (the **Geminor Letter**).
- 3.31. Geminor has an existing relationship with Beuparc, having worked with them to manage waste demand/supply across a number of projects.
- 3.32. As noted in paragraph 3.15 above, Geminor has entered into a long term waste supply with the Bridgwater project in Somerset to supply up to 75,000 tonnes RDF per annum; we understand this project is in the final stages of construction.
- 3.33. As noted in the Planning Supporting Statement (paragraph 4.27) it is assumed that, if the proposed ERF does not receive planning permission from Dorset, then it is likely that Geminor will satisfy its supply obligations to Bridgwater by allocating a portion of the RDF produced at Canford Magna. This would result in a journey of c. 120km (approximately twice the distance to the proposed ERF with associated transport flows) and the resulting cost and carbon implications but would be an improvement on the current European export position.
- 3.34. However, consistent with the Beuparc Letter, if the proposed ERF is developed we expect that RDF produced at Canford Magna will be treated at the proposed ERF (in accordance with the proximity principle) and, in this circumstance, we expect Geminor would utilise other RDF sources to supply Bridgwater.

Canford Magna Expansion Plans

- 3.35. The above demonstrates an identified route to the supply of c. 82,000 tonnes of Dorset source RDF from the Canford Magna facility to the proposed ERF.
- 3.36. However, approximately 321,000 tonnes of residual waste that would be potentially available for processing into RDF for use at the proposed ERF is currently still landfilled or exported by Dorset and this figure is expected to grow over time.
- 3.37. In the event there is a demand for RDF within Dorset, for example from the proposed ERF, commercial logic would suggest that additional RDF will be produced in the county, avoiding the additional transport and/or landfill costs.
- 3.38. As outlined in the Beuparc letter, the Canford Magna site is to have its capacity increased from the existing Environment Agency permitted level of 125,000 tonnes per annum to around 200,000 tonnes per annum. The reason for this increase is to allow Canford Magna to process additional LACW and C&I waste arising in Dorset.
- 3.39. We understand this increase does not have any planning implications and the permit variation is expected to be granted in early 2022.
- 3.40. This planned increase in capacity and activity at the Canford Magna facility will support employment and enhance resilience of this important allocated site which has long served the waste management needs of Dorset.
- 3.41. If the proposed ERF is granted planning permission then this planned change means that it would be possible to supply close to 100% of its RDF requirements from Dorset waste that is processed at Canford Magna. This would be the most rational and efficient solution for Dorset and accord with the objective of the Dorset Waste Plan and national waste management law and policy.

Conclusion

- 3.42. There is clearly more than sufficient residual waste arising in Dorset to justify the proposed ERF and materially more within the catchment area.
- 3.43. There is clearly insufficient existing capacity in Dorset to treat Dorset residual waste arisings, and this also applies to the wider catchment area.
- 3.44. The use of the ERF for the treatment of residual waste would be rational for local waste producers including notably Dorset Council, and would enable compliance with waste management law and policy.
- 3.45. The Beuparc and Geminor Letters provide significant support to the assumption that RDF produced at Canford Magna will be supplied to the

proposed ERF should planning be granted. Post expansion, the volume of RDF produced at Canford Magna would be close to 100% of the proposed ERF's treatment capacity.

- 3.46. The majority of the proposed ERF capacity would be available to manage Dorset RDF waste. However, ultimately future procurement decisions by Dorset Council and C&I waste producers will decide whether the proposed ERF is utilised for the treatment of Dorset residual waste.
- 3.47. As a merchant plant, the proposed ERF will provide a solution that should offer the most cost effective and sustainable solution for Dorset arisings but will need to retain the ability to source RDF from elsewhere to the extent the local waste is not made available at on-market commercial terms.

4. Q31: Potential Impact of Proposed RDF Operation at Eco Sustainable Solutions

- 4.1. We are aware of the potential delivery of an RDF facility at the Eco Sustainable Solutions site in Parley.
- 4.2. The proposal involves a 60,000 tonnes per annum project, with c. 20% of the waste recycled and the remainder processed via moving grate technology to generate energy. The net impact on residual waste arisings within our defined catchment area is therefore 50,000 tonnes per annum.
- 4.3. We note that a previous application was granted in 2015 at Parley to deliver an increase in throughput capacity of 56,000 tonnes per annum but that this was not delivered (application reference: 8/14/0515).
- 4.4. We are further aware that major waste companies have historically considered developing much larger facilities at Parley. The site was promoted by Eco-Sustainable Solutions in association with waste management company Veolia, during the preparation of the draft Dorset Waste Plan for a large-scale ERF.
- 4.5. However, it is understood that major waste companies are no longer involved due to the significant reduction in scale of ERF that can be accommodated on the site due to the significant planning constraints.
- 4.6. The Assessment of Waste Local Plan Allocated Sites document (submitted as part of the planning application) noted that whilst the Parley site was assessed in the Waste Plan³ for its potential to manage around 160,000 tonnes per annum of residual waste, this assessment failed to realistically take into account the combination of the need to safeguard ecological interests and satisfy the Habitats Regulations (requiring a stack in excess of 70m) which are inconsistent with the restrictions imposed on maximum stack height due to the site's location within the airport's 45m aerodrome safeguarding zone (Inner Horizontal Surface).
- 4.7. The proposed facility includes a stack height of 38m (so within the airport safeguarding tolerance) but this has resulted in concerns being raised by a number of parties (including Dorset council) regarding the potential adverse ecological and landscape and visual impact, associated with the site's close proximity to internationally protected heathland sites and its green belt location.

³ Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019

- 4.8. We also note that the proposed site only provides 30% of the allocated Waste Plan capacity and therefore further capacity is required in Dorset, irrespective of the decision at Parley.
- 4.9. In our assessment of the impact on waste above we have assumed that (a) the project is granted planning permission and (b) that it is successfully delivered. We have shown that even in this scenario there are sufficient waste arisings in Dorset and the catchment area to meet the waste need case for the Powerfuel ERF.
- 4.10. In the context of Waste Plan Policy 4 (Applications for waste management facilities not allocated in the Waste Plan), and specifically criterion b, we would not anticipate that the granting of planning to the proposed ERF would have a material impact on the potential to deliver the Eco Sustainable Solutions site. It would therefore not sterilise or prejudice the delivery of this allocated site that would otherwise be capable of meeting waste needs, by reason of cumulative or other adverse impacts.

Conclusion

- 4.11. There is more than enough residual waste from Dorset for both the proposed ERF and the potential Parley facility. Materially more is available from the wider catchment.
- 4.12. The Parley scheme is likely to deliver only 30% of the waste plan assessed capacity due to site location constraints.
- 4.13. In the context of DWP Policy 4 criterion b (Applications for waste management facilities not allocated in the Waste Plan), the granting of planning to the proposed ERF would not have a material impact on the potential to deliver the Eco Sustainable Solutions site. It would not therefore sterilise or prejudice the delivery of this allocated site that would otherwise be capable of meeting waste needs, by reason of cumulative or other adverse impacts.

5. Q32: Impact of European Market Development and Potential Future Export Issues

UK/Europe RDF Export Market Development

- 5.1. Following the Environmental Agency decision to “potentially permit” RDF exports in June 2010, the UK has exported increasingly significant volumes of RDF to Europe.
- 5.2. The increase was driven by a combination of a shortage of available UK processing plant, the impact of reduced landfill capacity (as many local authorities, like Dorset, have closed their facilities) and an increasing cost of landfill (from £15/tonne in 2004 to £94/tonne in 2020).
- 5.3. The DEFRA Digest of Waste Resource Statistics (2018 edition) notes that the export of RDF from England and Wales increased from 9,000 tonnes in 2010 to 3.2 million tonnes in 2017. Export has historically been mainly to Northern European nations, in particular the Netherlands and Germany.
- 5.4. The Chartered Institute of Waste Management (CIWM) Presidential Report 2018 provides further context, noting that in 2016 the UK exported roughly 55% of all waste exported across the European Union.
- 5.5. From 2011 onwards (when there was approximate cost parity between RDF export costs/tonne and landfill cost/tonne) the disposal cost via RDF export was between 5% and 10% below the equivalent cost for UK landfill, which increased over time due to the landfill tax.
- 5.6. Throughout the 2011-2017 period, whilst it was the case the RDF export costs increased the cost of the alternative available solution, UK landfill, increased by a greater extent, thereby retaining the attractiveness of RDF export relative to UK landfill.
- 5.7. Since 2017 export from the UK to Europe has fallen. According to the UK Energy From Waste Statistics reports, produced on an annual basis by Tolvik, RDF exports to Europe declined by 8% in 2018, 16% in 2019 and 31% in 2020, although the latter figure is likely to be impacted by the COVID pandemic and commentators have suggested volumes have recovered post 2020.
- 5.8. This reduction in RDF export volume has coincided with a material increase in UK RDF processing capacity. According to reports from Tolvik, in 2015 there were around 35 facilities in the UK with a total operational capacity of c. 9 million tonnes per annum. At December 2020 this had increased to 54 fully operational facilities with a total operational capacity of c. 14.5 million tonnes per annum.

5.9. In addition to the increased domestic capacity, thereby creating a third option over landfill and RDF export, a number of other policy and commercial drivers have resulted in a reduction in RDF export volumes:

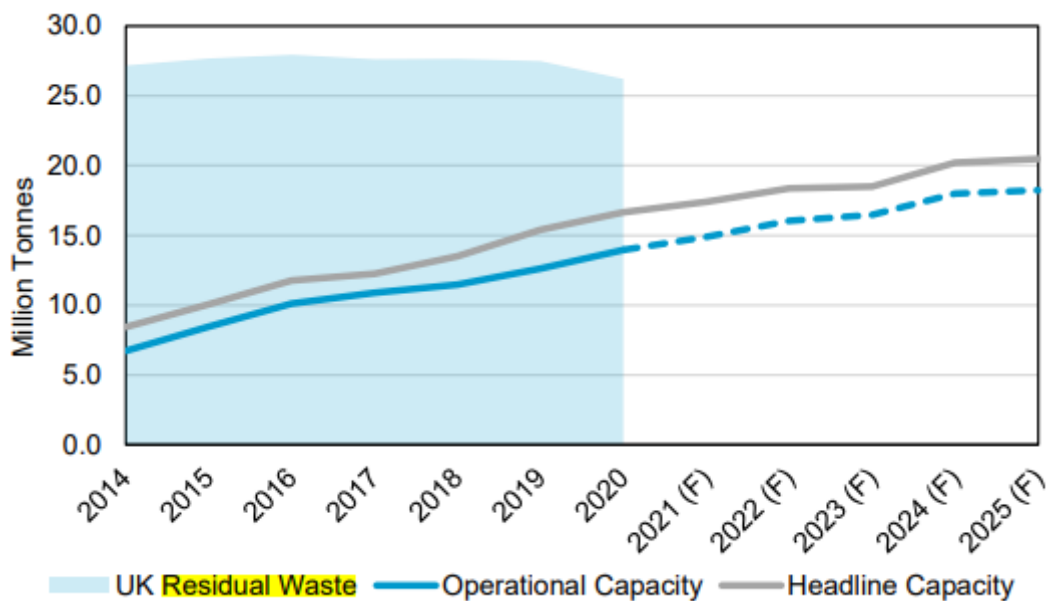
1. **European Competition** – increased demand for processing capacity has resulted in higher gate fees being achieved by operators. This impacts UK exporters more than European counterparts as they also need to consider the cost of transporting the waste from its source to the processing facility.
2. **GBP Sterling Depreciation** – the largest increase in RDF exports to Europe occurred in the period 2015-2017 where exports increased from 2.4 million tonnes to 3.2 million tonnes. During this period the GBP:EUR exchange rate averaged 1.3. Since then, post the Brexit vote, the exchange rate has averaged 1.2. This c. 10% weakness increases the GBP denominated costs of export relative to domestic solutions.
3. **Proximity / Self Sufficiency Principle** – local authorities elsewhere in the UK have permitted facilities in their areas ensure compliance with these key principles. This has allowed a greater amount of domestic waste to be fully processed without having to utilise landfill or export options.
4. **European Policy/Tariffs** – in 2019 the Netherlands confirmed they will progress a RDF importation tax in order to ensure existing capacity can meet their domestic demand (noting the Netherlands imported 1.3 million tonnes of RDF from the UK in 2018). In time it is logical to assume that European capacity will prioritise European waste over non-European sources (in a similar way that Hampshire waste authorities prioritise Hampshire sources of waste for management at its PFI funded facilities). This “waste localism” or “waste nationalism” means an authority should increasingly look to ensure it has a waste solution for the arisings in its jurisdiction.
5. **Carbon Focus** – local authorities and the general public have become increasingly aware of the carbon impact of their actions. As outlined in the updated Carbon Assessment ⁴ whilst the export of RDF for treatment in Europe is preferable to landfill, it is expected to result in a higher carbon impact than treatment at a well-designed facility such as the proposed ERF that will be capable of providing both shore power and district heating.

⁴ Appendix 4.1 of the ES Addendum

UK Market Analysis

- 5.10. The development of UK energy from waste projects has reduced landfill and RDF export to Europe, both of which result in cost and carbon savings.
- 5.11. UK EfW and ERF processing capacity has increased in recent years. According to Tolvik, ERF processing inputs were responsible for 13.96 million tonnes of residual waste in 2020 (equivalent to c. 52% of all UK residual waste).
- 5.12. However, the UK still landfilled 10 million tonnes of all residual waste (c. 40% of all residual waste) and exported 1.32 million tonnes of RDF (c. 8% of all residual waste) to Europe in 2020.
- 5.13. There is no “surplus” or “spare” ERF capacity in the UK; whilst there may be over-supply of capacity in certain regions, other regions (like Dorset) have no capacity and are essentially exporting their waste responsibilities, ultimately to either a landfill or RDF export route, which does not sit comfortably with the principles of sustainable management, self-sufficiency or proximity.
- 5.14. The diagram below, produced by Tolvik, provides a graphical representation of the existing UK residual waste volume versus the project RDF processing operational capacity.
- 5.15. As can be seen there is still a significant capacity gap to be filled, providing opportunity and justification for new facilities, especially in locations where there are no existing competing facilities, such as Dorset.

Project UK Capacity versus UK Residual Waste Volumes



Source: Tolvik analysis

European Market Analysis

- 5.16. As noted above increases in volumes exported to Europe from 2010 were driven by a shortage of available UK processing capacity resulting in the only processing options being (a) landfill or (b) RDF export.
- 5.17. Initially, even with significantly lower gate fees in Europe, the additional costs of preparing/baling/wrapping RDF, port costs, sea transport and European on-land transport meant that all in disposal costs for RDF export were higher than domestic ERF.
- 5.18. The “Reasons for trends in English refuse derived fuel exports since 2010” report published by the Environment Agency in July 2015 estimate these additional costs could add c. £50/t to the gate fee charged at the European facility.
- 5.19. It is interesting to note that whilst gate fees at UK facilities were significantly higher than their European counterparts (as a result of the technological advantages discussed below) the all-in cost of disposal at a European facility was higher than at a domestic facility (post inclusion of wrapping and transport costs).
- 5.20. However, there was not sufficient UK capacity to process “available” waste (developed capacity was largely contracted to local authorities under PPP/PFI schemes, e.g. Hampshire) and therefore the only alternative to RDF export was landfill.
- 5.21. Due to the imposition and increase in the landfill tax, the all-in cost of exporting to a European facility (including all transport costs) was still lower than the alternative, being landfill, which resulted in the large increase in RDF export volumes.
- 5.22. It is appropriate to comment on the significant difference between UK and European facility gate fees.
- 5.23. Historically, due to the configuration of heating networks, a key difference between European and UK facilities has been that European facilities typically operate in CHP mode, utilising both heat and power. This compares to the UK fleet which has traditionally focussed on power only, in part due to the relative sparsity of commercial heat offtakers and the lack of policy and financial support for district heating in the UK.
- 5.24. The result of this is that European plants are able to export a significantly higher level of total energy per tonne of waste than their UK counterparts, i.e. they are more efficient and have a competitive advantage.
- 5.25. Approximate figures comparing different jurisdictions indicate that the UK generates 0.68MWh/t, comprised of 0.56MWh/t electricity (82%) and 0.12MWh/t

heat (18%). In contrast, a typical European facility (ignoring Scandinavian facilities that are positive outliers due to the extensive district heating network) would generate c. 1.1MWh/t, comprised of roughly 50/50 electricity and heat.

- 5.26. The ability to generate almost 2x the energy from the same tonne of RDF means that, historically, European facilities typically have greater carbon benefits than their UK counterparts. This greater efficiency has also allowed them to absorb the additional transport costs when the only competition in the UK was a landfill option (with the associated tax).
- 5.27. However, going forward it is expected that new UK facilities, including the proposed ERF, will be CHP ready and will take steps to identify and connect to existing heat offtakers to improve the carbon outcome and generate additional revenues.
- 5.28. As outlined in the updated Carbon Assessment a UK facility that can operate in CHP mode, as is the expectation for the proposed ERF, produces a higher level of carbon reduction per tonne than export to a European facility, due to the avoided transport costs.
- 5.29. In addition, due to the additional transport costs there is no commercial rationale for a European facility to seek to compete for available RDF against an equivalent UK facility. The gate fee discount required, in order to offset the additional transport costs, would be commercially irrational and therefore, given the additional UK capacity, there is unlikely to be a reversal in the downwards RDF export trend over the medium term.
- 5.30. In addition, unlike a decade ago, European facilities do not need to attract UK RDF export to remain viable, given the existing on continent demand and significant increase in demand anticipated as a result of policy requirements.
- 5.31. According to data published by the European Commission, in 2019 53 million tonnes of municipal waste was sent to landfill and 60 million tonnes was processed in ERF/EfW facilities.
- 5.32. Further in line with the EU Landfill Directive (EU, 1999, 2018a), Member States must reduce the amount of municipal waste sent to landfill to 10% or less of the total amount of municipal waste by 2035.
- 5.33. In 2019 only 10 Member States had achieved this target, with several of these countries utilising ERF/EfW facilities to process a significant amount of municipal waste. The remaining 17 Member States required further changes to their waste management approach, and 12 of these had landfill rates that were 4x or more than the EU target (in Eastern Europe it is still typical for over 50% of municipal waste to be landfilled).

- 5.34. This suggests that there is more than enough waste available to keep all of the ERF plants in Europe operating at full capacity, which is the most economically sensible approach as opposed to reducing gate fees to look to continue to attract UK waste.

Conclusion

- 5.35. Ultimately, absent any regulatory or legal restrictions, waste companies (and indeed local authorities responsible for the fate of waste that is produced in their areas) will process waste where it is most cost effective to do so.
- 5.36. The proposed ERF would treat 180,000-200,000 tonnes of RDF. When considering the “impact” of the development, this should be seen against the total export of UK RDF which was 1.32 million tonnes in 2020, and the current European position where in 2019 53 million tonnes of municipal waste was sent to landfill with a total of 60 million tonnes processed in ERFs. Any impact on the overall position is likely to be limited and reducing export is consistent with UK waste management policy and will result in a net decrease in carbon cost.
- 5.37. However, on the assumption that the technology installed in the UK is equivalent to that in European markets (which is an objective of the pan-European “best available techniques” and energy efficiency rules which are applied at the environmental permitting stage) and further, that UK facilities are able to maximise these revenue streams, there is no logical reason why RDF exports should not continue to fall as new UK facilities become available.

6. Appendix 1 – Beauparc Letter of Intent

Beauparc Head Office
Ballymount Road Upper
Ballymount
Dublin24
Republic of Ireland
D24 E097
T +353 1 4245021
www.beuparc.ie



Powerfuel Portland Limited
2nd Floor Regis House
45 King William Street
London
EC4R 9AN

30th July 2021

Dear Sirs

Letter of Intent - Powerfuel Portland Limited Energy Recovery Facility

Subject to Contract

I write to reaffirm the expectation of Beauparc Group (**Beauparc**), through its wholly owned subsidiary, New Earth Solutions (Canford) Ltd, to supply Refuse Derived Fuel (**RDF**) to the "Powerfuel Portland ERF" facility (the **Portland Facility**) located at Portland Port, Isle of Portland, Dorset.

Beauparc is an experienced European waste management group that processes more than 3 million tonnes of waste per year across 40 waste facilities, employing over 2,300 staff. In June 2021 Macquarie Group, a major global infrastructure fund, announced it had agreed to acquire Beauparc (subject to EC Merger Control Clearance by the European Commission), bringing additional strength to the business.

In Dorset, New Earth Solutions (Canford) Ltdowns and operates a 125,000 tonnes per year MBT Treatment Facility located at Canford (the **Canford Facility**) that produces RDF that would be suitable for the Portland Facility. The Canford Facility has been a key part of Dorset's waste management solution since 2007 and was awarded a six year contract beginning September 2021 (with a further three year extension option) by Dorset Council in July 2020.

Last year (2020 full year) the Canford Facility had inputs of regionally sourced residual waste mainly from Dorset Council and Bournemouth, Poole and Christchurch areas of over 118,000 tonnes. The RDF exported from the Canford Facility, and out of the County, was over 82,000 tonnes.

We have recently announced plans to expand the capacity of the Canford Facility to 200,000

Company Registration No. 605063
Directors E, Waters, Brian McCabe, D
Crinion

Company Registered Office: Panda Waste Management Solutions, Ballymount Road Upper, Ballymount, Dublin, D24 E097

tonnes per year which would provide further opportunity to provide supply to the Portland Facility, with the increased feedstock expected to be sourced from both additional municipal and C&I volumes generated in Dorset/BCP. It is expected that this expansion would be operational in 2022, subject to necessary adjustments to existing consenting.

As you know we have had extensive discussions over the past two years to explore the potential to supply RDF from the Canford Facility to the Portland Facility, if planning and financial close is achieved. Subject to Geminor Group (Geminor) the parties negotiating and signing a waste supply contract with you ("Fuel Supply Agreement"), Beaparc anticipates partnering with the Geminorto supply a significant proportion of the total supply volume in the region 180,000 – 200,000 tonnes of RDF per annum to the Portland Facility. The combination of the Canford and Portland Facilities would provide a complete local solution for the processing of Dorset's waste and should also be cost-effective for all parties, avoiding the potential for landfill and/or transporting waste for secondary processing outside of Dorset/UK, as is currently required. Overall, the Portland facility would align well with Beaparc's Dorset operations and provide the most efficient route to market to manage waste and generate energy.

We understand that the proposed supply contract with Geminor would be for a term of up to 20 years with an initial period of 10 years from takeover, with market breaks to follow at 5 year intervals. We further understand that Geminor and Powerfuel Portland would look to target local source municipal and C&I waste as a priority, on the expectation that this would be commercially feasible. The awarding of the Dorset waste contract to the Canford Facility and our ambitions to expand this project should allow Beaparc to help ensure a large volume of the RDF supplied to the Portland Facility will be local source waste.

We further understand that the Geminor/Powerfuel Portland Fuel Supply Agreement will include a customary "direct agreement" contract between New Earth Solutions (Canford) Ltd and Powerfuel Portland, to ensure the Beaparc RDF supply will survive, even in the event of an termination of the Geminor/Powerfuel Portland Fuel Supply Agreement.

Powerfuel Portland will continue to collaborate with Beaparc to support future bids into future Dorset Council waste procurements, and others such as Bournemouth, Poole and Christchurch and similarly Beaparc will use all reasonable endeavors to provide additional Dorset tonnage to the Portland Facility to help the site fulfil the requirements of the proximity principle.

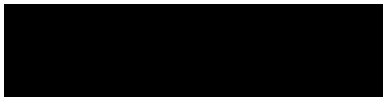
The parties (Geminor and Powerful Portland) expect to negotiate a comprehensive Fuel Supply Agreement prior to the commencement of construction of the Portland Facility.

Nothing expressed or implied in this letter is intended (nor has the effect) to create any binding and/or legal relations between the parties.

Yours faithfully

Company Registration No. 605063
Directors E, Waters, Brian McCabe, D
Crimion

Company Registered Office: Panda Waste Management Solutions, Ballymount Road Upper, Ballymount, Dublin, D24 E097



Brian McCabe
Director

Company Registration No. 605063
Directors E, Waters, Brian McCabe, D
Crimion

Company Registered Office: Panda Waste Management Solutions, Ballymount Road Upper, Ballymount, Dublin, D24 E097

7. Appendix 2 – Geminor Letter of Intent



Geminor UK Ltd
Innovation Centre 3
Keele Science Park, Keele
Staffordshire ST5 5NP

T: +44 01782 950 471

info@geminor.co.uk
www.geminor.co.uk

VAT Registration:
GB 344971884
Registered in England:
8155115

Powerfuel Limited
2nd Floor, Regis House
45 King William Street
London
EC4R 9AN
(Company number **11820375**)

19th July 2021

Dear Sirs

Letter of Intent – Powerfuel Portland Limited Energy Recovery Facility

Subject to Contract

I write to confirm that Geminor UK, part of the Geminor Group (Geminor) remains interested in supplying and managing the supply of Refuse Derived Fuel (RDF) to the Powerfuel Portland ERF facility (the Portland Facility) located at Portland Port, Isle of Portland, Dorset.

The Geminor Group is an internationally recognised and certified specialist service provider in the resource management market. Geminor has a direct footprint/presence in 9 European nations and activity in a further 3 supplying waste derived fuel to over 80 facilities that are similar to the Portland Facility.

Geminor expects to supply RDF of a volume in the region of 180,000 – 200,000 tonnes per annum. This volume will originate from Geminor's network of RDF producers (which extends across the UK and Europe).

As you are aware, Geminor has a strategic relationship with the Beuparc Group and we would anticipate a significant proportion of the supply volume will originate from Dorset sources, including RDF produced at the Beuparc owned facility located at Canford, Dorset, given the supplychain benefits which are realised when recovering RDF proximate to the site at which the RDF is produced.

We further note that the Portland Facility, given its location at a deep-water Port, is in a position to leverage the logistical benefits of being so located that are not available



to all UK EfW plants. In the future, should the local sources of RDF not be sufficient to supply the entirety of the feedstock demand at the Portland Facility; its location directly on a port allows for the optimisation of logistical efficiencies when supplying RDF produced at other UK sites via bulk vessel. Thereby avoiding haulage by road and the contribution to local traffic that this would create.

The proposed supply contract will be for a term of up to 20 years with an initial period of 10 years from takeover, with market breaks to follow at 5 year intervals.

Geminor will target locally sourced residual municipal and analogous C&I waste as a priority, on the understanding that this will be commercially feasible.

We understand there should be sufficient waste volumes arising within Dorset and we are aware of the ambition for significant expansion of RDF production from the Canford plant which provides further opportunities for the Portland Project.

We have agreed that Powerfuel Portland will continue to support future bids into Dorset Council waste procurements, and others including Bournemouth, Poole and Christchurch and similarly Geminor will look to prioritise the supply of additional Dorset and BCP tonnages to the Portland Facility.

We have agreed the key commercial metrics and the fuel specification and expect to convert this understood position into a comprehensive Fuel Supply Agreement prior to the commencement of construction of the Portland Facility, which we anticipate will be in early 2022.

Nothing expressed or implied in this letter is intended to create any binding and/or legal relations between the parties.

Yours sincerely,



James Maiden

Country Manager, UK

