

Portland
energy recovery
facility

Environmental statement

12 Waste

Introduction

- 12.1 Terence O'Rourke Ltd undertook the assessment of waste effects. The assessment focused on the potential increase in Dorset's non-hazardous residual waste management capacity as a result of the proposed development. The potential increase in the wider regional non-hazardous waste management capacity was also examined. The generation of waste as a result of the construction and operation of the proposed development was scoped out of the assessment. The references and data sources in used the assessment are set out in table 12.1.

BCP Council and Dorset Council, 2019, Bournemouth, Christchurch, Poole and Dorset Waste Plan
BPP Consulting, 2017, Bournemouth: Baseline for Commercial & Industrial Waste & Construction, Demolition & Excavation Waste Generated in Bournemouth, Dorset & Poole
Defra, 2020, Dataset ENV18: https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables
Environment Agency, 2019, Waste Data Interrogator 2018
ERM, 2020, Powerfuel Waste Statistics Analysis Summary Report
South West Waste Technical Advisory Board, 2017, Residual Waste Management in the South West
Table 12.1: References and data sources

Legislation and policy

EU directives

- 12.2 The EU Circular Economy Package (CEP) was published in 2015 and aimed to ensure that waste is effectively re-used, recycled and reintroduced into national economies to move towards a circular economy. It amended a number of directives, including those discussed below, with the amendments coming into force on 4 July 2018. Despite the UK's departure from the EU, the government has ratified these and indicated that the circular economy measures will be implemented into UK law.
- 12.3 The Waste Framework Directive 2008/98/EC (as amended by Directive (EU) 2018/851) provides the legislative framework for the collection, transport, recovery and disposal of waste. It requires that waste legislation and policy apply the principles established by the waste management hierarchy, which sets out that waste should be managed in the following order of preference: prevention, preparing for re-use, recycling, other recovery, and disposal.
- 12.4 The Landfill Directive 1999/31/EC was introduced to reduce member states' reliance on landfill and included challenging targets for the reduction of biodegradable waste sent to landfill. The Landfill Directive has been amended by the CEP to include a landfilling ban for separately collected waste and limit the share of municipal waste landfilled to 10% by 2035.

National legislation

- 12.5 The Waste Framework Directive was transposed into national law through the Waste (England and Wales) Regulations 2011 (as amended). These set out, among others, provisions in respect of waste prevention programmes, waste

management plans, duties in relation to waste management, the use of waste as a resource, and the duties of planning authorities. The Regulations require the establishment of an integrated and adequate network of waste disposal installations and installations for the recovery of mixed municipal waste collected from private households. The network must enable the UK to move towards the aim of self-sufficiency in waste disposal and the recovery of mixed municipal waste, and enable such waste to be disposed of / recovered in one of the nearest appropriate installations.

National policy

- 12.6 The *Waste Management Plan for England (2013)* provides an analysis of the current waste management situation in England and evaluates how it will support implementation of the objectives and provisions of the Waste Framework Directive. It confirms that *“the government supports efficient recovery from residual waste – of materials which cannot be reused or recycled – to deliver environmental benefits, reduce carbon impact and provide economic opportunities.”*
- 12.7 The *National Planning Policy for Waste (2014)* sets out detailed waste planning policies. It highlights that waste planning authorities should *“drive waste management up the waste hierarchy, recognising the need for a mix of types and scale of facilities, and that adequate provision must be made for waste disposal”* and *“plan for the disposal of waste and the recovery of mixed municipal waste in line with the proximity principle, recognising that new facilities will need to serve catchment areas large enough to secure the economic viability of the plant.”*
- 12.8 The government’s *Our Waste, Our Resources: A Strategy for England (2018)* aims to move the UK to a more circular economy, essentially by keeping resources in use for longer and extracting maximum value. The strategy aims to eliminate biodegradable waste to landfill and recognises that growth in energy from waste and alternative waste treatment infrastructure will be expected to divert further waste from landfill.

Local policy

- 12.9 The adopted Bournemouth, Christchurch, Poole and Dorset Waste Plan (2019) sets out guiding principles for waste management in the area, including sustainable development, the waste hierarchy, self sufficiency and the proximity principle, and the circular economy. Policy 1: Sustainable waste management requires development proposals to adhere to these principles. Policy 3 allocates sites for waste management development, while policy 4 states that applications for waste management facilities that are not allocated in the plan will only be permitted where they meet a number of criteria.

Methodology

Baseline

- 12.10 A desk-based assessment was undertaken to collate existing data on waste management arrangements and capacities in Dorset and the South West region, which was informed by a statistical analysis of waste data sources undertaken

by ERM (2020). The references and data sources used in the study are set out in table 12.1.

Impact assessment

- 12.11 There are no known published standard criteria for assessing the significance of effects arising from changes in waste management practices. The significance of effects has been evaluated by comparing the additional waste management capacity created by the proposed development with the existing capacity in Dorset and the South West and existing quantities of waste generated and managed in the areas.

Limitations and uncertainties

- 12.12 Data from Defra's national database ENV18 have been used to establish the baseline waste management position in Dorset and the South West, as these represent the most up-to-date dataset. The Environment Agency's waste data interrogator has only been used in relation to refuse-derived fuel (RDF) waste streams, because the figures presented in the interrogator cannot be extrapolated to demonstrate linear waste flows without applying a range of assumptions. In addition, the data recorded as 'subject to transfer' within the interrogator may be double counted with the site where the waste is ultimately disposed of through landfill or incineration.
- 12.13 Within Defra dataset ENV18, figures for total collected waste are based on reported local authority collected waste, while figures for total managed waste are based on local authority collected waste that is disposed of or sent for recycling / composting. The figures for total managed local authority collected waste may not match the figures for total collected local authority collected waste, as a result of stockpiling of waste between reporting periods and rejects (i.e. materials that were collected for recycling or composting but rejected as not suitable for these processes, either at collection, during sorting at a materials recovery facility, or at the reprocessor's gate).

Baseline

Dorset municipal waste generation and management

- 12.14 In the 2018/19 financial year, a total of 395,108 tonnes of waste was collected by local waste authorities in Dorset, encompassing Dorset Waste Partnership, Bournemouth Borough Council and Poole Borough Council, as follows:
- Dorset Waste Partnership collected 214,374 tonnes, of which 196,709 tonnes (92%) was household waste
 - Bournemouth Borough Council collected 85,186 tonnes, of which 76,376 tonnes (90%) was household waste
 - Poole Borough Council collected 78,331 tonnes, of which 66,510 tonnes (85%) was household waste
- 12.15 Of the total waste collected, 52% was sent for recycling, composting or re-use, and 46% was not recycled, with the remainder comprising rejects from the management process (Defra, 2020). Table 12.2 shows the breakdown of how Dorset's local authority collected waste was managed in 2018/2019. As

discussed in paragraph 12.13, the total figure for waste managed differs from that set out above because of stockpiling between reporting periods and rejects.

Area	Landfill (t)	Incineration with energy recovery (t)	Recycle / compost (t)	Other (t)	Total (t)	Input to interim plants (t)
Dorset Waste Partnership	30,333	57,445	123,278	5,843	216,898	64,230
Bournemouth	7,641	29,612	42,039	5,894	85,185	44,662
Poole	13,370	22,927	38,655	3,379	78,331	23,126
Total	51,344	109,984	203,972	15,116	380,414	132,018

Table 12.2: Dorset local authority collected waste by management method (Defra, 2020)

12.16 Table 12.2 shows that the overall re-use, recycling and composting rate for Dorset's local authority collected waste in 2018/19 was approximately 54%, with 14% landfilled and approximately 29% sent for incineration with energy recovery.

12.17 There are only two permitted non-hazardous waste landfill sites in Dorset, both of which are currently non-operational. The Trigon landfill site at Wareham has an extant consent to 2027, but is now closed. The Beacon Hill landfill site at Corfe Mullen was consented to 2019 and this is now assumed to have expired. While these landfill sites have been safeguarded in the waste plan for potential future use, neither is expected to re-open and they have not been counted in the plan towards landfill capacity. As a result, all of Dorset's residual waste that is sent to landfill is exported out of the county, to the Blue Haze landfill at Ringwood in Hampshire and Walpole landfill at Bridgwater in Somerset.

12.18 There is only one operational recovery facility in Dorset, a mechanical biological treatment (MBT) plant at Canford Magna, which is co-located with a materials recovery facility (MRF) and an inert recycling facility. Residual waste from Dorset, Bournemouth and Poole is sent to this MBT plant, which pre-treats the waste and produces RDF. The RDF is currently exported to Europe for use as a fuel and there are no energy recovery facilities in Dorset. In addition to the export of the RDF, Dorset's residual waste that is sent for energy recovery currently goes to the Marchwood energy from waste plant in Hampshire, while some of Poole's residual waste is sent to the Lakeside energy from waste facility in Slough.

12.19 As there are currently no operational landfill or energy recovery sites in Dorset, it is understood that almost all of the collected residual waste (51,344 tonnes sent to landfill and 109,984 tonnes sent for energy recovery in 2018/19) is being exported out of the county for treatment and disposal.

Dorset commercial and industrial waste generation and management

12.20 Information on commercial and industrial waste is more difficult to obtain than that for municipal waste because of the number of premises producing waste and the greater number of contracts and other arrangements that exist for recycling or disposing of commercial and industrial waste. BPP (2017) estimated commercial and industrial waste arisings as part of the evidence base for the draft waste plan. Table 12.3 sets out the quantities and management routes for commercial and industrial waste arisings managed at sites within Dorset and exported out of the county.

Management destination	Landfill (t)	Metal recycling sites (t)	Transfer (t)	Treatment (t)	Recovery (t)	Total (t)
Plan area arisings managed at plan area sites	80,329	0	0	274,347	0	354,676
Plan area arisings managed at sites outside plan area	12,229	27,386	38,728	6,854	7,179	92,376
Total	92,558	27,386	38,728	281,201	7,179	447,052

Table 12.3: Management routes of commercial and industrial waste arisings from the Dorset waste plan area in 2015/16

12.21 Table 12.3 shows that just over 447,000 tonnes of commercial and industrial waste was generated in the Dorset waste plan area in 2015/16 and, while much of this was treated at facilities in Dorset, a significant proportion (18%) was estimated to have been sent to landfill in Dorset and a further 3% went to landfill outside of the county. It should be noted that there are now no operational landfill sites in Dorset, so the proportion of the waste managed outside the county is likely to have increased.

South West waste municipal waste generation and management

12.22 In the 2018/19 financial year, a total of 2,587,412 tonnes of waste was collected by local authorities in the South West region, 2,414,726 tonnes (93%) of which was household waste and 172,686 tonnes (7%) of which was non-household waste. Of the total, 49% was sent for recycling, composting or re-use and 49% was not recycled, with the remainder comprising rejects from the management process (Defra, 2020).

12.23 Table 12.4 shows the breakdown of how the South West region's local authority collected waste was managed in 2018/19. As discussed in paragraph 12.13, the total figure for waste managed differs from that set out above because of stockpiling between reporting periods and rejects.

Management method	Tonnes	Percentage
Landfilled	499,277	19.3%
Incinerated with energy recovery	735,003	28.3%
Recycled / composted	1,294,819	49.9%
Incinerated without energy recovery	1,696	0.1%
Other	62,517	2.4%
Total	2,593,313	100%

Table 12.4: South West local authority collected waste by management method (Defra, 2020)

12.24 The South West region is the best performing region in the country in terms of recycling rates and is well above the national average of 43.5% of waste being recycled or composted. However, it is the worst performing region in terms of the proportion of waste sent to landfill, again being well above the national average (10.8%). This is as a result of a much lower proportion of waste being sent for incineration with energy recovery than other regions and nationally (43.1%) (Defra, 2020).

12.25 The South West Waste Technical Advisory Board (2017) states that landfill capacity in the South West declined from 50.7 million cubic metres in 2006 to 19.6 million cubic metres in 2015. While several non-hazardous landfill sites still have extant permissions, a large number of these have been permanently closed

or mothballed. Landfill operators have indicated that further sites are anticipated to close before reaching their planning permission expiry date and before using all the remaining permitted capacity.

- 12.26 The advisory board also considered regional energy recovery capacity. It found that there were 2.9 million tonnes of permitted capacity in the South West, divided into 747,300 tonnes of anaerobic digestion and 2,107,570 tonnes of thermal treatment (including incineration, gasification and pyrolysis). However, much of this permitted capacity is unimplemented, with only 42% currently operational. There are four fully operational thermal treatment plants in the region (with a total capacity of 665,000 tonnes) and 16 anaerobic digestion plants (with a total capacity of 534,300 tonnes).
- 12.27 The Environment Agency's (2019) waste data interrogator shows that 345,000 tonnes of RDF were produced in the South West in 2018. The majority of this was produced in Bristol (199,000 tonnes), followed by Poole (89,000 tonnes), Wiltshire (29,000 tonnes) and Swindon (27,000 tonnes), with the remainder coming from Somerset. The majority of this RDF (281,000 tonnes) was exported outside the UK for management. The remainder was managed in England, but only 9,200 tonnes stayed within the region. Most of the RDF (286,000 tonnes) was sent to treatment facilities (mainly incinerators). However, 57,800 tonnes went to recovery facilities and 1,200 tonnes went to landfill.

Future baseline

Dorset residual waste generation and management

- 12.28 The adopted waste plan predicts that local authority collected waste arisings in Dorset will increase throughout the plan period, reaching 453,000 tonnes per year by 2033. Commercial and industrial waste arisings are also predicted to increase, reaching 572,000 tonnes per year by 2033. The demand for non-hazardous residual waste treatment capacity is also predicted to increase, reaching 359,000 tonnes per year by 2033. This is predicted to result in a shortfall of 234,000 tonnes per year of treatment capacity.
- 12.29 The adopted waste plan allocates three sites for the provision of new facilities for the management of residual wastes, plus additional capacity at the existing Canford Magna MBT plant. It states that the total future capacity of these four sites is 385,000 tonnes per year, which would exceed the identified need. However, no planning applications have been made for these facilities to date and the assessment of allocated sites report submitted in support of this application raises queries as to the availability, viability and deliverability of these sites. In addition, it should be noted that none of the identified preferred sites in the 2006 waste plan delivered an ERF and little capacity has been delivered in the 14 years since that plan was adopted. While planning permissions were granted for advanced thermal treatment facilities at a site in Winfrith in 2010 and at Canford Magna in 2013, neither were viable and they were never completed.

South West residual waste generation and management

- 12.30 The South West Waste Technical Advisory Board (2017) estimates that the region will generate approximately 2.45 million tonnes of residual waste per year by 2027/28 that will require management by either energy recovery or landfill.

This figure represents approximately a 10% increase from around 2.23 million tonnes in 2015. The data include commercial and industrial waste for some of the region's authorities but not all, indicating that the total quantity of residual waste requiring management in the region is likely to be higher.

Effects post-construction

Introduction

- 12.31 While the majority of the assessments in the ES have been undertaken based on the 202,000-tonne maximum throughput of the proposed ERF, this assessment has been based on the 183,000-tonne nominal capacity because this represents the worst case in terms of waste management capacity. As the proposed development will be a merchant plant, it is not pre-contracted to manage a specific waste authority's arisings. Instead, it will offer a facility for waste producers, authorities and managers to use as they require. This means that it is not being built specifically to manage residual waste from Dorset and / or the wider South West, although will be in a good position to do so.
- 12.32 This assessment examines the potential increases in local and regional waste management capacity under the scenarios that the plant solely manages waste from Dorset or the wider South West. However, it should be noted that it is possible that some of the plant's capacity could be used to manage waste from other areas in the event that local or regional waste authorities do not choose to use the proposed ERF.

Residual waste management capacity in Dorset

- 12.33 As discussed in paragraph 12.19, 161,328 tonnes of residual local authority collected waste were exported out of the county for treatment and disposal in 2018/19. In addition, table 12.3 shows that 19,083 tonnes of commercial and industrial waste were exported out of the county for treatment and disposal in 2015/16 and a further 80,329 tonnes were sent to landfill in Dorset. As there are now no active landfills in Dorset, it is assumed that this waste is also now exported for disposal, giving a total of 260,740 tonnes of residual waste from Dorset that is currently not managed within the county. This shortage of capacity in Dorset means that the county's residual waste treatment capacity is considered to be of high sensitivity to changes in provision.
- 12.34 Dorset's collected residual waste is currently managed by means of short-term contracts, although Dorset Waste Partnership will be looking to secure long-term contracts for its collected residual waste within the next few years. Residual waste contracts will also need to be procured by Bournemouth, Christchurch and Poole Council when the existing contracts expire in 2021 (Bournemouth) and 2027 (Poole).
- 12.35 Even allowing for a reduction in the available weight as a result of processing untreated elements of the residual waste into RDF, these figures indicate that all of the proposed ERF's capacity could be used to treat waste generated in Dorset if the councils choose to award the contracts to the proposed development. A 183,000 tonnes increase in the county's residual waste management capacity represents approximately 70% of the residual waste currently exported out of the county for management and disposal. This would

be a large increase in capacity, leading to a substantial, significant beneficial effect.

Residual waste management capacity in the South West

- 12.36 If the full capacity of the proposed development is not used to manage waste from within Dorset, there is the potential for it to accept waste from within the wider South West region. As discussed in paragraph 12.27, 281,000 tonnes of RDF were exported for management outside the UK from the South West in 2018. The shortage of available capacity to manage this RDF within the South West means that the region's RDF management capacity is considered to be of high sensitivity to changes in provision.
- 12.37 Subject to the award of appropriate contracts, it is possible that all of the proposed ERF's capacity could be used to manage RDF generated in the South West that is currently being sent outside the UK. A 183,000 tonnes increase in the region's RDF management capacity represents approximately 65% of the RDF currently exported outside the UK. This would be a large increase in capacity, leading to a substantial, significant beneficial effect.

Mitigation and monitoring

- 12.38 As no potential significant adverse effects have been identified, no mitigation or monitoring is required.

Residual effects

- 12.39 The significant residual effects are summarised in table 12.5.

Topic	Significant residual effect	Receptor sensitivity	Impact magnitude	Nature	Duration	Degree of effect	Level of certainty
Waste	Increase in Dorset's residual waste management capacity	High	Large	Beneficial	Long-term	Substantial	Uncertain
	Increase in the South West's RDF management capacity	High	Large	Beneficial	Long-term	Substantial	Uncertain

Table 12.5: Significant residual effects

Cumulative effects

- 12.40 None of the consented or proposed developments in the vicinity of the site will provide additional residual waste treatment capacity. There is therefore no potential for significant cumulative effects.