



Portland  
energy recovery  
facility

Waste need statement

September 2020



**PORTLAND ENERGY RECOVERY FACILITY (ERF)**  
WASTE NEED STATEMENT  
POWERFUEL PORTLAND LIMITED  
AUGUST 2020



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## SUMMARY

- S.1 This Waste Need Statement for the proposed Portland energy recovery facility (ERF) has considered relevant waste management legislation and policy and evidence from waste data published by DEFRA, which provides statistics at the national, regional and local waste authority levels. This is supplemented by data identified from other sources including the Environment Agency's Waste Data Interrogator, and the Dorset Council, Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019, and its associated evidence base documents, (hereafter referred to as the Dorset Waste Plan) together with commissioned waste market analysis reports.
- S.2 Policy drivers at the European, national and local levels seek to secure more sustainable waste management practice encompassing the principle of the circular economy, the waste hierarchy and the self-sufficiency and proximity principles. These promote recycling and the recovery of energy from residual waste that cannot be recycled. Maximum use should be made of residual waste, by diverting more of this from landfill to energy recovery. Each area should take responsibility for managing its own waste and this should be managed close to where it arises.
- S.3 According to DEFRA figures, in 2018/19 the Dorset waste authorities combined 'collected' a total of 395,108 tonnes of waste, the majority being household waste (339,595 tonnes). The Dorset Waste Partnership collected the largest proportion of the total, accounting for 58%. Next was Bournemouth Borough Council, accounting for 22%, and then Poole Borough Council, accounting for 20%. Some 52% of this waste (203,972 tonnes) was sent for recycling, composting or reuse, and 46% (173,919 tonnes) was not sent to recycling (with the remainder being reject material).
- S.4 According to DEFRA figures, in 2018/19 the Dorset waste authorities combined 'managed' a total of 380,415 tonnes of collected waste. Of this around 204,000 tonnes was recycled or composted with over 51,300 tonnes landfilled. This represents an overall re-use, recycling and composting rate of approximately 54% and a landfill rate of around 14%. Around 29% was sent for incineration with energy recovery. These figures demonstrate that there is a need to divert more of this waste away from landfill, the least sustainable option, and further up the waste hierarchy via energy recovery.
- S.5 In addition, significant volumes of C&I wastes are generated in Dorset (around 447,000 tonnes of C&I wastes in 2015/16), with 80,329 tonnes significant volumes being exported to Dorset landfill (now closed) and a further 12,229 tonnes to landfill outside of the county.
- S.6 All of the landfill sites in Dorset have now closed and there are no proposals to extend the existing sites or open new ones at the present time to provide further capacity. As a result, all of Dorset's residual waste, that is not sent for energy recovery, is exported to Hampshire and Somerset. Given that Dorset has no remaining operational landfill capacity, there is a need to minimise the amount of waste sent to landfill, both now and in the future, given that the county is now reliant upon the transportation of waste to landfill outside of its Waste Plan area.

- S.7 There are no ERFs located in Dorset capable of managing its residual waste and most is therefore exported out of the county for treatment or disposal, and in the case of RDF this is sent to Europe for use in ERF's. This current practice is not sustainable and a significant proportion of the residual waste stream is suitable for energy recovery within Dorset. There is a pressing need for Dorset to reduce its reliance on the export of residual waste, become more self-sufficient and treat more of its residual waste in Dorset closer to where it arises, in accordance with the proximity principle.
- S.8 Little new residual waste management infrastructure has been delivered over recent years in Dorset and proposals for advanced thermal treatment facilities have proven not to be viable. The county is heavily reliant upon the export of its residual waste out of county. There is a need for a proven, reliable and bankable ERF that is deliverable and capable of meeting Dorset's needs in the long term.
- S.9 Without any action taken there will be an increasing shortfall in residual waste treatment capacity in Dorset reaching 234,000 tonnes by 2033 (annually). There is an urgent need for new waste management infrastructure of the type proposed to meet the significant projected shortfall.
- S.10 Four sites are identified in the Dorset Waste Plan for new residual waste treatment capacity (a combined capacity of 385,000 tonnes). These sites are subject to significant planning and environmental constraints and are either unlikely to come forward and contribute any capacity, or could only accommodate small scale facilities that are less likely to be viable and deliverable. A need exists for a large-scale ERF facility as proposed at the application site, which is proven, viable and deliverable.
- S.11 A merchant ERF at Portland, will help meet Dorset's need for flexibility being able to adapt to changing waste market conditions and by reducing the practice of residual waste export can secure a value for money solution for Dorset residents.
- S.12 Nationally and regionally high volumes of residual waste are being generated, and despite efforts to reduce waste production, increase re-use and recycling and recover energy from waste, significant volumes of residual wastes (arising from both municipal and C&I sources) are still being sent to landfill for disposal. Furthermore, around 2.5 Mt of UK derived residual waste is exported to Europe for use as a fuel in ERF of which 2.1 Mt is RDF, which could instead be recovered in the UK at ERF's.
- S.13 The south west region is generating 2.6 Mt of residual waste and 0.5Mt of this is sent to landfill. It is the worst performing region in England in terms of the percentage of waste landfilled (19%) and sends less residual waste to energy recovery (28%), compared to England as a whole (43%). Some 81% of the RDF produced regionally is exported to Europe. A need exists to divert more residual waste from landfill to energy recovery and to manage more RDF in the region.
- S.14 The regional need for residual waste treatment facilities is expected to increase in future years due to economic growth. This will coincide with a decline of landfill capacity and the likelihood that some consented energy recovery capacity will not come forward, culminating in a need for new energy recovery capacity that is likely to perform a cross boundary function.

- S.15 As a merchant plant capable of sourcing waste from the waste market, the proposed ERF is well placed to meet Dorset's residual waste treatment needs. and contribute to a wider regional and national need, by diverting more of this waste away from landfill, the least sustainable option, and further up the waste hierarchy via energy recovery.
- S.16 Additionally, the proposed ERF is located at a port and is capable of accessing other residual waste streams, where economic to do so, by sea from the UK or Ireland, which might otherwise go to other ERF's in Europe. Between 195,000 and 310,000 tonnes of RDF, is being exported by ship from England and Eire to mainland Europe, through the English Channel, and this passes in the vicinity of Portland Port. Some of this RDF could potentially be diverted to the Portland ERF.
- S.17 The applicant has partnered with one of the leading companies in Europe specialising in the supply of waste products to recycling and energy recovery to prepare a robust fuel supply strategy. Whilst still at planning stage the Portland ERF has already secured (through Geminor) access to 60,000 tonnes of Dorset residual waste, with potential for this to increase in future years. Additional residual waste is likely to be sourced from neighbouring counties transported to the site by road and from other areas by sea.
- S.18 From the available evidence, there is a compelling need case for the proposed Portland ERF in policy terms and there is a demonstrable quantitative and market need for a new waste management facility of this type in Dorset to meet local, regional and national need.

## 1.0 INTRODUCTION

- 1.1 Terence O'Rourke Ltd was commissioned by Powerfuel Portland Limited (the applicant) to prepare a Waste Need Statement in support of its proposal to construct a new energy recovery facility (ERF) on land at Portland Port, Portland, Dorset. In addition to primary research, this report draws upon statistical analysis of waste data sources undertaken by Environmental Resources Management Limited (ERM) and waste market assessment undertaken by Tolvik Consulting.

### **Background**

- 1.2 For many years the UK was heavily reliant upon landfill for the disposal of much of its waste arisings. However, as a result of new European and national legislation, strategies and policy, there has been a fundamental shift towards the delivery of a more sustainable waste management practice. This has required significant capital investment in the delivery of a network of modern waste management infrastructure that is capable of recovering materials for recycling and reuse and energy from residual waste.
- 1.3 The UK has made significant advances in reducing the amount of waste sent to landfill, the least sustainable option for waste management, and pushing waste management further up the waste hierarchy. However, there remains a need to do much more.
- 1.4 The UK as a whole continues to landfill large quantities of waste that could and should be managed more sustainably and in the context of global declarations of climate emergency. Furthermore, whilst the UK has achieved its statutory landfill diversion targets, this has in many cases been achieved by processing waste to recover recyclable materials and exporting the residual waste that cannot be practicably recycled outside of the UK to Europe where this is used as a fuel to recover energy.
- 1.5 Whilst some parts of the UK are well served by modern waste management infrastructure, others are much less so, and the network of waste management installations remains incomplete. It is essential that further investment is made to provide new facilities where there is insufficient capacity to meet existing and future need, and particularly in locations such as Dorset where residual waste is landfilled or exported out of county.
- 1.6 Need is often a matter that is the subject of much debate in the context of planning applications for waste management facilities and especially those that relate to energy from waste. Objectors to such planning applications often claim that sufficient capacity already exists and that there is no need for any additional treatment capacity. Furthermore, evidence is frequently put forward by third parties relating to the volume of waste arisings within an area, the existing method of treatment for that waste and the need for any additional capacity to support an alternative view.
- 1.7 This statement sets out the waste need case for the provision of a new ERF located at Portland, which would be capable of meeting Dorset's existing and future residual waste management needs and making a useful contribution to the wider regional and national need for sustainable waste management.

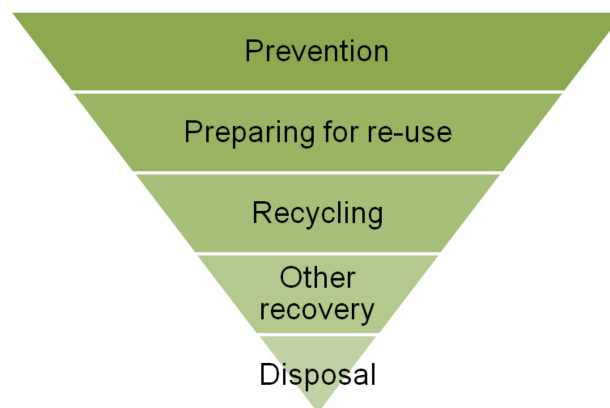
## 2.0 WASTE POLICY DRIVERS

### Waste legislation and strategies

#### *Waste Framework Directive and Circular Economy Package*

- 2.1 The EU Waste Framework Directive (2008/98/EC) provides the primary legislative framework for the collection, transport, recovery and disposal of waste. It requires member states to take the necessary measures to ensure that waste is recovered or disposed of without endangering human health or causing harm to the environment and includes permitting, registration and inspection requirements. The Directive also sets challenging targets for specific waste streams including the recycling, or preparation for re-use, of 50% of municipal waste (household and similar wastes) by 2020.
- 2.2 The Directive sets out a hierarchy of waste management (the waste hierarchy), under which preferences for the treatment of waste are set out in respect to their relative sustainability. The waste hierarchy, as set out below, places prevention, reuse and recycling at the top of the hierarchy, with disposal (landfill or incineration without energy recovery) at the bottom. Recovery, which includes the recovery of energy from waste, is regarded to be more sustainable than, and preferable to, disposal to landfill.

*Figure 2.1: Waste hierarchy*



- 2.3 The Directive makes a distinction between low efficiency incineration technology (categorised as disposal) and high efficiency incineration (categorised as recovery). The criteria set out within the WFD apply an R1 calculation, with the threshold for achieving recovery status (R1) being 65% efficiency. The proposed Portland ERF would achieve R1 status.
- 2.4 Article 16 of the Waste Framework Directive enshrines the concepts of self-sufficiency and proximity principle. These two principles underpin European and UK waste policy and require all members to cooperate to establish a network of waste facilities that enable the EU as a whole becomes self-sufficient for its waste management.



- 2.5 The proximity principle requires the network to be designed so that waste is managed at the nearest available facility, ensuring that waste is managed close to where it arises and reducing the distance that waste travels for treatment.
- 2.6 The self-sufficiency and proximity principles underpin the waste management strategies and policies applied at the UK national, regional and local levels.
- 2.7 Geographical circumstances and the need for specialist facilities for some waste types will need to be taken into account when devising the network of installations and it would not be appropriate for all states to possess the full range of waste facilities. This is also reflected in UK guidance. However, the general principles of self-sufficiency and proximity principle should be applied where appropriate.
- 2.8 The Directive has been transposed through the Waste (England and Wales) Regulations 2011 (as amended). These set out, inter alia, provisions in respect to 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. These establish a duty to apply the waste hierarchy and set out the requirements in relation to the key waste management principles of self-sufficiency and proximity.
- 2.9 The Directive defines what is waste and establishes categories for particular types of waste. At a high level these are:
- Municipal waste – considered to be household waste and commercial waste that is similar to household waste (MSW)
  - Industrial (including agricultural) and commercial waste (C&I)
  - Construction and demolition wastes (C&D)
  - Hazardous waste
- 2.10 The Directive has been subject to numerous amendments since 1975. Most recently Directive 2008/98/EC was amended by Directive 2018/851, as part of the Circular Economy Package (CEP). In addition to existing targets, Directive 2018/851 sets out three new targets:
- by 2025, re-use and the recycling of municipal waste shall be increased to a minimum of 55% by weight
  - by 2030, re-use and the recycling of municipal waste shall be increased to a minimum of 60% by weight and
  - by 2035, re-use and the recycling of municipal waste shall be increased to a minimum of 65% by weight.
- 2.11 The CEP also introduces other relevant targets for waste management:
- A common EU target for reuse and recycling 70% of packaging waste by 2030;

- A binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2030;
  - A ban on landfilling of separately collected waste;
  - Promotion of economic instruments to discourage landfilling.
- 2.12 Whilst the UK officially left the EU on 31 January 2020, the Great Repeal Bill (which became law by Royal Assent in June 2018) confirmed that all existing EU law will become directly applicable to UK law, including all the pledges made under the CEP, as well as environmental legislation and targets. Given that the UK has committed to match the CEP, the Directive and CEP will continue to form an integral part of UK environmental law and will continue to drive waste sustainable management practice.

### ***Resources and Waste Strategy***

- 2.13 The Resources and Waste Strategy is the first update of national waste strategy since the 2011 Waste Review. Linked to the government's 25 year Environmental Plan, which pledges to leave the environment in a better condition for the next generation, it aims to move the UK to a more circular economy, essentially by keeping resources in use for longer and extracting maximum value. It focuses on particular waste problems such as single use plastics, confusion over recycling systems and a reduction in packaging waste.
- 2.14 The strategy is framed by natural capital thinking and guided by two overarching objectives, these being to maximise the value of resource use; and to minimise waste and its impact on the environment. The strategy is supported by five strategic principles, the most relevant to this application being *'to prevent waste from occurring in the first place, and manage it better when it does'*.
- 2.15 The strategy highlights 12 Mt of municipal waste sent to landfill in 2016 and the need to eliminate biodegradable waste to landfill, the expected growth in energy from waste and alternative waste treatment infrastructure to further divert waste from landfill, and the need for efficiency of EfW plants to achieve recovery status (R1 status).
- 2.16 The strategy indicates that on current waste projections, further market investment in residual waste treatment infrastructure is necessary and welcomed.
- 2.17 Strategy targets relevant to this application include:
- 50% recycling of household waste by 2020
  - 65% recycling of municipal waste by 2035
  - 10% maximum of municipal waste to landfill by 2035
  - Eliminate food waste to landfill by 2030
  - All plastic packaging to be recyclable, reusable or compostable by 2025
  - 75% recycling of packaging by 2030.

## **Waste planning policy frameworks**

- 2.18 The delivery of sustainable waste management principles established under legislation and national strategies is principally achieved through national and local waste planning policy. Other fiscal measures, introduced by the Government, have also contributed towards these goals, most significantly the landfill tax mechanism.
- 2.19 Relevant waste planning policy in the context of the proposed Portland ERF is considered in detail in chapter 5 of the Planning Supporting Statement, submitted with this application. However, the following is relevant in respect to the waste need case.

### ***National Planning Policy Framework***

- 2.20 The national planning policy framework, comprising both the National Planning Policy Framework (NPPF) and National Planning Practice Guidance (NPPG), fully supports sustainable development, whilst reducing emissions in respect of climate change.
- 2.21 The core sustainability principles equally apply to waste management through consideration of three overarching objectives, these being economic, social and environmental (NPPF paragraph 8).
- 2.22 To ensure that sustainability is enshrined in a positive way through the planning process a presumption in favour of sustainable development sits at the heart of the framework (NPPF paragraph 9).

### ***National Waste Management Plan for England 2014***

- 2.23 The Waste Management Plan for England (WMPE) is a high level strategy document which is non-site specific. It provides an analysis of the current waste management situation in England, and sets how it will support implementation of the objectives and provisions of the revised WFD. These include moving waste away from landfill and further up the waste hierarchy, promoting self-sufficiency in terms of waste management capacity and managing waste closer to its origins under the proximity principle.
- 2.24 The WMPE notes that there are comprehensive waste management policies in place in England that deliver upon the revised WFD objective which is:  
*“to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use”.*
- 2.25 As such, the WMPE does not introduce new waste management policies, but rather its aim is to bring current waste management policies under the umbrella of one national plan.

### ***National Planning Policy for Waste 2014***

- 2.26 This provides national planning policy for waste, which is to be read in conjunction with the NPPF 2019 and WMPE 2013.
- 2.27 The WMPE and National Planning Policy for Waste (NPPW) therefore both apply the waste hierarchy and aim to increase recovery from waste through the timely provision of modern waste facilities that divert waste from landfill. Positive planning can provide a framework to help communities take more responsibility for their own waste, *“by enabling waste to be disposed of or, in the case of mixed municipal waste from households, recovered in line with the proximity principle”* (NPPW paragraph 1).
- 2.28 In the context of need, the national policy guidance requires communities and businesses to take responsibility for the disposal of their own waste and in the case of mixed municipal waste take responsibility for recovery, in line with the proximity principle. More generally, planning should also help secure the re-use, recovery or disposal of waste without endangering human health and without harming the environment.
- 2.29 Paragraph 7 of the NPPW only expects applicants to demonstrate the quantitative or market need for new or enhanced waste management facilities such as incinerators where this is not consistent with an up to date development plan. The Planning Supporting Statement explains in detail how the proposed ERF is in accordance with the Dorset Waste Plan. However, whilst need also has to be weighed against any harm or adverse impacts that the proposed development may give rise to, it is also a material consideration that weighs heavily in its favour in the planning balance.

### ***Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019***

- 2.30 The Bournemouth, Christchurch, Poole and Dorset Waste Plan (hereafter the Dorset Waste Plan) was adopted in 2019, by the newly formed waste authorities of Dorset Council and Bournemouth, Christchurch and Poole Council (BCP), and superseded the 2006 Waste Plan.
- 2.31 The Dorset Waste Plan sets out the existing pattern of waste management practice within Dorset, including waste arisings for 2015/16 and future waste arisings for the plan period to 2033. It confirms future need and the need for additional treatment capacity required to meet local needs, taking account of key waste policy drivers such as, the waste hierarchy, self-sufficiency and proximity principle.
- 2.32 The need case in respect to Dorset waste is considered in more detail in chapter 5 of this document.

## 3.0 WASTE DATA SOURCES

### Introduction

- 3.1 It is recognised that there are many sources of waste data, that provide a picture of existing waste management practice at the macro-scale (national) and micro-scales (local). Useful waste data can also be derived at a regional level and by looking at analysis for specific waste catchment areas. However, these data sets are often quite complex and are derived using different categorisation of wastes, differing data ages and also provide potential for double counting or omissions of waste volumes.
- 3.2 The applicant therefore commissioned ERM to undertake analysis of available waste data. The findings of this are presented in the Waste Statistics Analysis - Summary Report (see Appendix 1). The report provides supporting evidence to the need case. The analysis includes data gathered by the technical consultant team and primary research undertaken by ERM. It include reference to the following data sources:
- Local, County/Unitary level waste plans and their supporting evidence base (current adopted version and where available, previous plans or their equivalent);
  - Environment Agency (EA) Waste Data Interrogator (WDI) for waste generated and waste managed from Dorset, the SW region and the whole of England; and
  - National statistics published by the Department for Environment, Food and Rural Affairs (DEFRA) for MSW and C&I waste, including where such data have a county-level split.
- 3.3 The ERM Summary Report summarises all of the waste data considered. This chapter draws upon its findings, focusing on the most relevant waste data to this proposal having considering various factors, including the data published and assumptions applied during analysis.
- 3.4 The following documents are considered to provide relevant waste data in respect to this application and consideration of matters of need:

### National and regional statistics

- Statistical data set ENV18 published by DEFRA - Local authority collected waste generation from April 2000 to March 2019 (England and regions)
- Overview statistics for RDF export from England, Footprint Services (based on Environment Agency Data) – March 2020
- Environment Agency (EA) Waste Data Interrogator (WDI) 2018 (England)
- Residual Waste Management in the South West, Prepared jointly by the South West Waste Technical Advisory Board (TAB) Authorities – October 2017

## **Dorset statistics**

- Bournemouth, Christchurch, Poole and Dorset Waste Plan (December 2019)
- Bournemouth, Dorset and Poole Waste Plan, Background Paper 1: Waste Arisings and Projections, November 2017
- Bournemouth, Dorset and Poole Waste Plan, Background Paper 3: Cross Boundary Movements of Waste, November 2017
- Bournemouth, Dorset & Poole Draft Waste Plan, Baseline for Commercial & Industrial Waste & Construction, Demolition & Excavation Waste Generated in Bournemouth, Dorset & Poole October 2017
- Environment Agency Waste Data Interrogator 2018 (England)
- Statistical data set ENV18 published by DEFRA - Local authority collected waste generation local authority data April 2018 to March 2019

## **Assumptions and limitations**

- 3.5 For the purposes of national, regional and Dorset levels the DEFRA national database ENV18 has been used. This is the most up-to-date data set. The EA WDI data is only being used for RDF waste streams.
- 3.6 This is because the figures presented in the WDI cannot be extrapolated to demonstrate the linear waste flows without applying various assumptions at the different contextual levels. Furthermore, the data recorded as 'subject to transfer' may also be double-counted with the site where they are ultimately disposed, e.g. landfill or incineration.
- 3.7 Within DEFRA dataset ENV18, Total collected waste is based on reported LACW and Total managed waste is based on LACW that is disposed or sent for recycling-composting. Total local authority collected waste (LACW) managed (as reported in Table 2) may not match total Local Authority collected waste collected as reported in Table 1 due to stockpiling of waste between reporting periods and rejects (i.e. materials that were collected for recycling or composting but rejected as not suitable for recycling, either at collection, during sorting at a Materials Recovery Facility (MRF) or at the re-processor's gate). A total for England cannot be obtained by summing data from all local authorities - data for waste collection authorities has been excluded to avoid double counting. Furthermore, the dataset does not include details of management destinations for the LACW.

## 4.0 DORSET WASTE

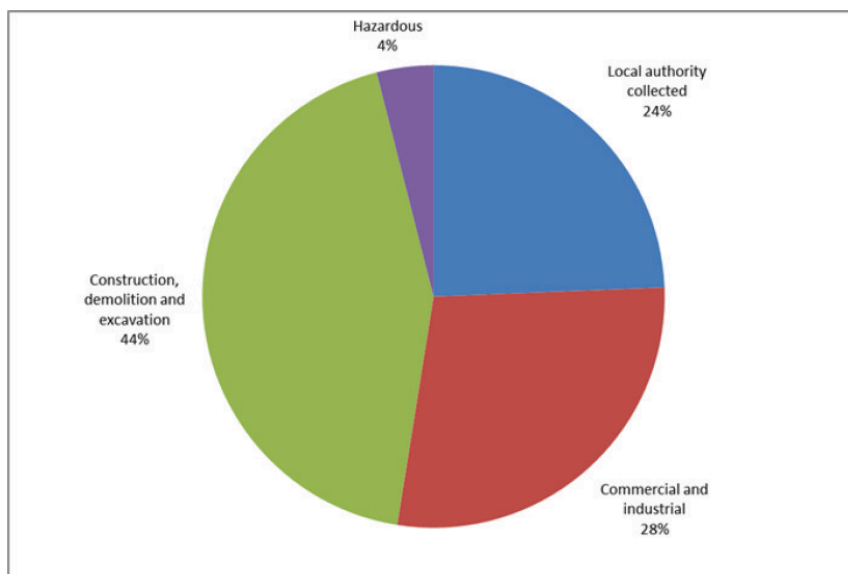
### Introduction

- 4.1 This chapter considers the baseline position in respect to both municipal and commercial and industrial waste arisings, methods of treatment and the existing pattern of management in Dorset.
- 4.2 In assessing need in context of managing Dorset’s waste, there are two separate but inter-related matters that must be accounted for: the landfill and other treatment capacity available within the county and possible levels of future waste arisings. These two parameters set the broad local need context. They provide a picture of the degree of urgency that is required in making the switch to more sustainable means of managing waste, by means of landfill diversion and resource recovery, and the likely level of need for wastes to be managed in the future.

### Existing waste arisings

- 4.3 The 2019 Bournemouth, Christchurch, Dorset and Poole Waste Local Plan (the Waste Plan) is the current local development plan and sets out the context and policy framework for the period to 2033. Whilst its data on waste arisings is based on 2015/16 data, it provides a useful indicator of the volume and characteristics of waste produced in the county.
- 4.4 It states that in 2015 around 1.6 million tonnes of waste was produced in the plan area. As shown in figure 4.1 below, the largest proportion of this was construction, demolition and excavation wastes (44%), followed by commercial and industrial (28%) and local authority collected (24%) (being primarily municipal household waste), with the remainder hazardous waste.

Figure 4.1: Proportions of waste arisings in the Dorset plan area (2015)



Source: Bournemouth, Dorset and Poole Waste Plan 2019, figure 2

4.5 Table 2 of the Background Paper 1<sup>1</sup>, which informed the development of the plan and is reproduced below as table 4.1, provides an overview of local authority collected wastes for the 8 year period 2008/2009 to 2015/16. This shows that such collected wastes have grown over this time period and by 2015/16 sat at just under 400,00 tonnes.

Table 4.1: LACW arisings (thousands of tonnes)

Area	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Dorset	221,402	216,897	213,257	212,687	206,030	214,298	217,183	218,436
B'mth	86,370	86,413	85,622	85,999	85,760	90,965	95,234	98,795
Poole	76,745	77,516	76,939	74,933	73,072	84,537	81,822	79,820
<b>Total</b>	<b>384,517</b>	<b>380,826</b>	<b>375,818</b>	<b>373,619</b>	<b>364,862</b>	<b>389,800</b>	<b>394,239</b>	<b>397,051</b>

Source: Dorset Waste Plan Background Paper 1 Waste Arisings and Projections 2017 (table 2)

4.6 The Background Paper also recognises that the methods of waste management have changed over recent years, reflecting a national policy move towards re-use, recycling and recovery and away from landfill. Figures for 2015/16 are set out in table 4.2 below.

Table 4.2: LACW management methods (2015/16)

	Reuse, recycle and compost	Landfill	Residual waste management
Dorset Waste Partnership	60%	21%	5%
Bournemouth	44%	12%	29%
Poole	42%	18%	6%

Source: Dorset Waste Plan Background Paper 1 Waste Arisings and Projections 2017 (table 3)

4.7 It also recognises (paragraph 2.10) that the former Bournemouth Borough Council was able to achieve a much lower rate of landfill (12%), compared to 18% for Poole and 21% for the rest of Dorset, through an increased amount of residual waste being processed through biological and mechanical treatment (MBT) and energy recovery.

4.8 These figures, albeit from 2015/16, demonstrate the value of treating residual waste to create RDF and the contribution energy recovery can make in reducing landfill.

<sup>1</sup> Bournemouth, Dorset and Poole Waste Plan Background Paper 1 Waste Arisings and Projections November 2017



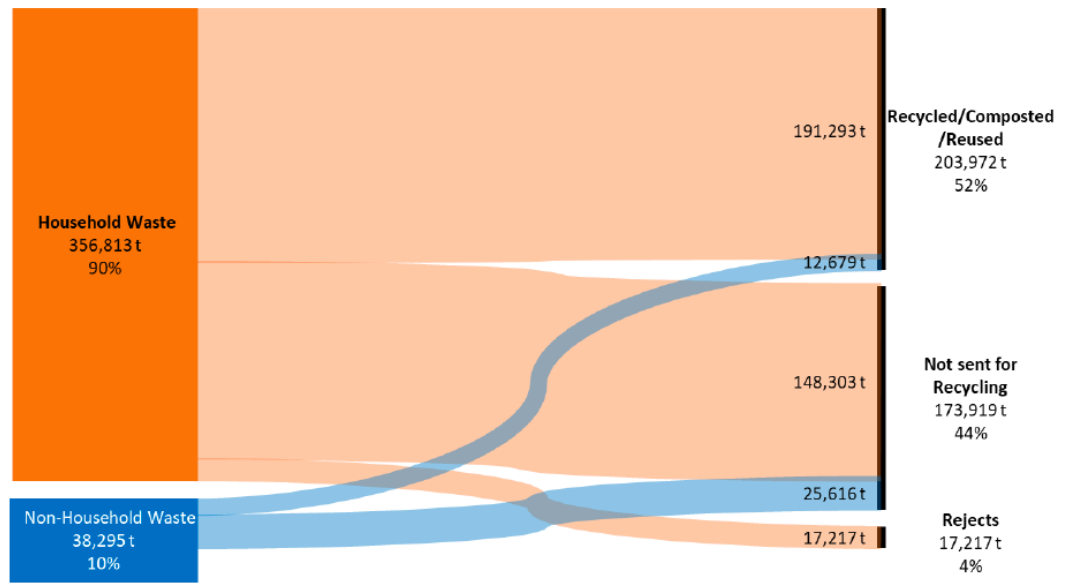
## Collected waste

- 4.9 Analysis of more recent data published by DEFRA<sup>2</sup> has been undertaken to identify the amount of LACW for 2018/19 and the method of management of those wastes for each of the Dorset waste authorities. This shows that:
- In 2018/19, 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. Of this 339,595 tonnes was household waste (excluding rejects of 17,217 tonnes) and 38,295 was non-household waste. Accordingly:
    - Dorset Waste Partnership collected 214,374 tonnes of which 196,709 tonnes was household waste
    - Bournemouth Borough Council collected 85,186 tonnes of which 76,376 tonnes was household waste
    - Poole Borough Council collected 78,331 tonnes of which 66,510 tonnes was household waste.
  - Of the total waste collected, 90% was household waste and 10% was non-household waste
  - Of the total waste collected, 52% (203,972 tonnes) was sent for recycling, composting or reuse, 46% (173,919 tonnes) was not sent to recycling and 4% (17,217 tonnes) was estimated rejects. Accordingly for:
    - The Dorset Waste Partnership, 123,278 tonnes was sent for recycling, composting or reuse (58%) and 91,096 tonnes was not sent for recycling (42%);
    - Bournemouth Borough Council, 42,039 tonnes was sent for recycling, composting or reuse (49%) and 43,147 tonnes was not sent for recycling (51%); and
    - Poole Borough Council, 38,655 tonnes was sent for recycling, composting or reuse (49%) and 39,676 tonnes was not sent for recycling (51%).
- 4.10 In terms of the split between household and non-household waste in Dorset, household waste accounted for more than 85% of the total in all local authorities. The highest proportion was 92%, for the Dorset Waste Partnership. There is variance between the local authorities in terms of the proportion that is sent to recycling/composting/reuse. The Dorset Waste Partnership sends 58% of the collected waste to recycling/composting/reuse. The other two authorities each send 49% to recycling/composting/reuse.
- 4.11 Figure 4.2 below shows the breakdown for the total local authority collected wastes for the Dorset context according to type (household and non-household) and its ultimate fate (recycled/composted/reused, not sent for recycling or reject).

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<sup>2</sup> Local authority collected waste generation from April 2000 to March 2019 (England and regions) and local authority data, DEFRA

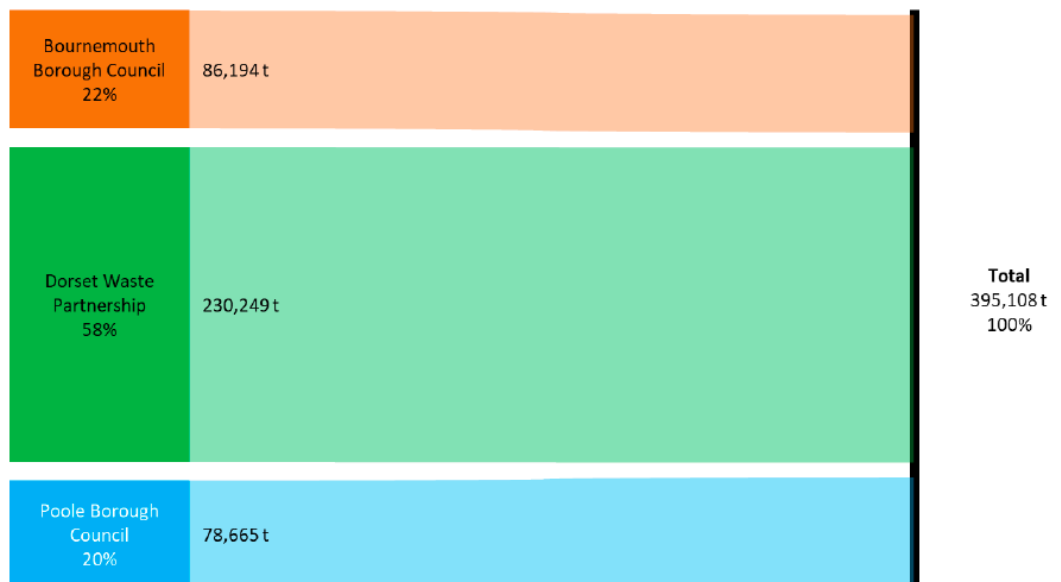
Figure 4.2: Dorset collected waste split by ultimate fate



Source ERM Summary Report (based on DEFRA ENV18 data)

4.12 Figure 4.3 shows the breakdown for the total local authority collected wastes for the Dorset context. Dorset Waste Partnership collected the largest proportion of the total, accounting for 58%. Next was Bournemouth Borough Council, accounting for 22%, and then Poole Borough Council, accounting for 20%.

Figure 4.3: Dorset LACW split by local waste authority area



Source ERM Summary Report (based on DEFRA ENV18 data)

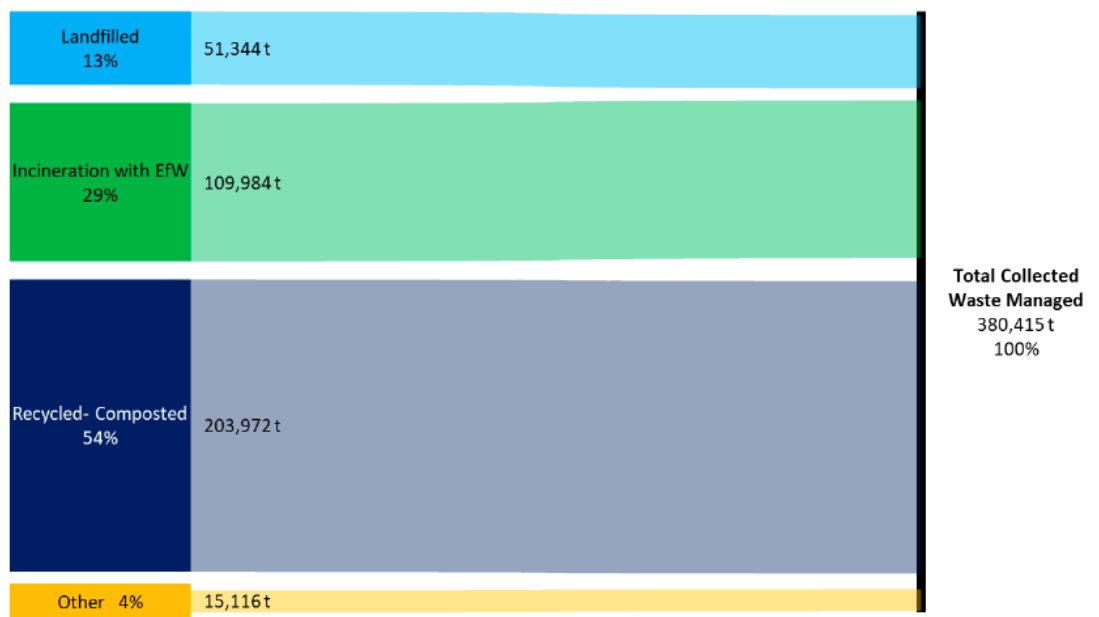
## The fate of managed waste

4.13 According to DEFRA Data set ENV18 – LACW 2018/19 financial year<sup>3</sup>:

- The total quantity of collected waste that is managed in Dorset was 380,4154 tonnes, encompassing the Dorset Waste Partnership, Bournemouth Borough Council and Poole Borough Council.
- Of this, 203,972 tonnes was recycled/composted, 109,984 tonnes was incinerated with energy recovery and 51,344 tonnes was landfilled.

4.14 Figure 4.4 shows the breakdown for the total local authority collected wastes for the Dorset context by ultimate fate.

Figure 4.4: Breakdown for Dorset split by ultimate fate



Source ERM Summary Report (based on DEFRA ENV18 data)

4.15 Of the overall quantity of collected waste managed, the management method adopted by each of the Dorset local waste authority areas is set out in table 4.3 below:

Table 4.3: LACW and management methods (2018/19) in tonnes

Area	Landfill	Incineration with EfW	Recycle compost	Other	Total
Dorset Waste Partnership	30,333	57,445	123,278	5,843	216,898

<sup>3</sup> <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>

<sup>4</sup> This figure does not match that quoted above for total local authority collected waste, due to the stockpiling of waste between reporting periods.

Area	Landfill	Incineration with EfW	Recycle compost	Other	Total
Bournemouth	7,641	29,612	42,039	5,894	85,185
Poole	13,370	22,927	38,655	3,379	78,331
<b>Total</b>	<b>51,344</b>	<b>109,984</b>	<b>203,972</b>	<b>15,116</b>	<b>380,414</b>

Source: LACW generation from April 2000 to March 2019 (England and regions) and local authority data, table 2

- 4.16 In Dorset in 2018/2019 all local authority collected waste amounted to a total over 380,414 tonnes of which just under 204,000 tonnes was recycled or composted with over 51,300 tonnes landfilled. This represents an overall re-use, recycling and composting rate of approximately 54% and a landfill rate of around 14%. Around 29% of Dorset's waste arisings were sent for incineration with energy recovery.

#### Commercial and Industrial wastes

- 4.17 Statistics for C&I waste have always been more difficult to obtain because of the number of premises producing waste and the greater number of contracts and other arrangements that exist for recycling or disposing of C&I waste.
- 4.18 A baseline report<sup>5</sup> prepared by consultants on behalf of the Bournemouth, Dorset and Poole waste authorities in October 2017, provided estimates of C&I waste arisings in the waste plan area. The report formed part of the evidence base for the draft Dorset Waste Plan. Table 4.4 below illustrates the quantum and management routes for C&I wastes, covering wastes arisings within the plan area and managed at sites within Dorset and those exported to management sites outside of Dorset.

Table 4.4: Management routes of C&I waste arising from the Waste Plan area

	Landfill	Metal recycling sites	Transfer	Treatment	Recovery to land	Total
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
<b>Totals</b>	<b>92,558</b>	<b>27,386</b>	<b>38,728</b>	<b>281,201</b>	<b>7,179</b>	<b>447,052</b>

Source: Baseline for Commercial & Industrial Waste & Construction, Demolition & Excavation Waste Generated in Bournemouth, Dorset & Poole, table 19, BPP Consulting October 2017

<sup>5</sup> Bournemouth: Baseline for Commercial & Industrial Waste & Construction, Demolition & Excavation Waste Generated in Bournemouth, Dorset & Poole, table 19, BPP Consulting October 2017

- 4.19 Table 4.4 above illustrate that around 447,000 tonnes of C&I wastes were generated in 2015/16 and that whilst a high proportion of this was treated at facilities in Dorset a significant proportion of this (80,329 tonnes) was estimated to have been sent to landfill in Dorset and a further 12,229 tonnes went to landfill outside of the county.

#### **Remaining landfill capacity**

- 4.20 Turning to the question of remaining landfill capacity, all of the existing landfill sites in Dorset have now closed and there are no proposals to extend the existing sites or open new ones at the present time.
- 4.21 The Dorset Waste Plan states (paragraph 7.69) that all remaining local authority collected residual wastes are sent to landfill. There are only two permitted non-hazardous waste landfill sites in Dorset, with both being non-operational at present. The Trigon landfill site at Wareham has extant consent to 2027, whilst the Beacon Hill landfill site, Corfe Mullen was consented to 2019 (the latter is now assumed to have expired).
- 4.22 Whilst these landfill sites have been safeguarded in the Dorset Waste Plan for potential future use, neither are expected to re-open and have not been counted towards landfill capacity.
- 4.23 As a result, all of Dorset's residual waste, that is not sent for energy recovery, is sent to the Blue Haze landfill, Ringwood, Hampshire and Walpole landfill in Bridgwater, Somerset. The Dorset Waste Plan anticipates that small volumes of waste are expected to continue to be sent to these locations over the Plan period.
- 4.24 Given that Dorset has no remaining operational landfill capacity, there is a need to minimise the amount of waste sent to landfill, both now and in the future, given that the county is now reliant upon the transportation of waste to landfill outside of its Waste Plan area.

#### **Proposals for new waste management facilities on allocated sites**

- 4.25 The Dorset waste planning authorities have through recent waste local plans and waste management strategies supported a shift away from reliance on landfill towards more sustainable methods of waste management. In doing so, they have identified both sites and preferred waste management technologies, for achieving this objective and for managing expected needs for additional waste treatment capacity in Dorset.
- 4.26 The Dorset Minerals and Waste Plan (1998) recognised the need for waste to be managed in a more sustainable way. Its key objectives were to minimise waste generation at source, dispose of unavoidable waste in ways that minimise disturbance of land and associated environmental effects, and maximise utilisation of waste as a resource for reclamation, energy generation or resource recovery. It considered the waste hierarchy in respect to the hierarchy of waste management solutions in terms of their desirability. However, at that time the waste plan still regarded landfill as the principal disposal option for the majority of waste arisings.

- 4.27 In terms of need, the plan included a new scenario for waste, and noted that this reflected the actual 1995/96 waste arising figures for biodegradable waste arisings and disposal (696,000 and 426,000 tonnes respectively). In terms of meeting need, waste to energy was not specifically precluded but reference was made to green alternatives such as composting and anaerobic digestion. The plan established a criteria based approach to the consideration of applications for waste to energy plants. It did not however specifically allocate any sites for waste management facilities, only providing a schedule of existing minerals and waste sites.
- 4.28 The Dorset, Bournemouth and Poole Waste Local Plan (2006) referred to existing waste management facilities with a capability of around 115,000 tonnes per annum, largely associated with existing and consented materials recycling facilities and composting facilities. It forecast a shortfall of 498,000 tonnes of extra waste treatment capacity, required at the end of the plan period, and forecast the need for up to 10 sites for treating non-inert wastes, including 3-4 sites for MBT facilities or similar.
- 4.29 The 2006 Waste Plan departed from the previous plan's criteria based approach and identified preferred sites for recovery and treatment sites. Planning applications on these sites would then be determined according to criteria set out in policies.
- 4.30 The following three sites were identified in the 2006 Waste Plan as potentially suitable for MBT with RDF, or for the thermal treatment of waste. The Waste Plan stated that large-scale mass burn plants were unlikely to be acceptable.
- Site 3: Winfrith, Purbeck (MBT with RDF)
  - Site 4: Bournemouth Airport, Christchurch (MBT with RDF)
  - Site 6: Hatchpond Depot, Poole (thermal treatment with energy recovery)
- 4.31 At that time the relevant waste planning authorities pursued different waste management strategies that comprised a mixture of MBT facilities, In-vessel composting, transfer facilities and household recycling centres. The success of the 2006 Waste Plan in meeting its capacity shortfall was largely dependent upon the future delivery of MBT/RDF facilities and composting to meet its future waste management needs.
- 4.32 However, 14 years on from the adoption of the 2006 Waste Plan, none of the identified preferred sites have delivered an energy recovery facility, and all three preferred sites have been deleted from the 2019 adopted Waste Plan. During this time, little capacity has been delivered in the way of residual waste treatment, with the exception being the MBT plant located at Canford Magna, Poole. Whilst planning permissions were granted for advanced thermal treatment facilities at Winfrith in 2010 and Canford Magna in 2013, neither were viable and they were never completed.
- 4.33 As a consequence of its reliance on delivering alternative waste management technologies, Dorset has managed to increase its recycling rate, but has failed to deliver any meaningful residual waste treatment capacity in Dorset to meet need. The result is that Dorset is now reliant upon the export of residual wastes that

cannot be recycled or re-used, following the removal of recyclates, to appropriate installations outside of Dorset and the UK, these typically being energy from waste facilities or landfill.

- 4.34 The 2019 Dorset Waste Plan safeguards a number of sites for waste management facilities. These are not technology specific but theoretically could include incineration with energy recovery. However, no planning applications have been made and there are concerns as to the availability, viability and deliverability of these sites. There appears to be little prospect of emerging proposals coming forward in the near future and if they do, given the significant planning and environmental constraints, there is no certainty that planning permission would be secured for an ERF (see separate Comparative Assessment Against Waste Plan Allocated Sites report).
- 4.35 The continued practice of exporting large quantities of Dorset's untreated residual wastes, or pre-treated RDF materials, to facilities located elsewhere in other counties and beyond in continental Europe, does not accord with the proximity principle and does not enable Dorset to be self-sufficient in respect to the treatment of its own residual wastes.
- 4.36 In these circumstances there is an urgent and compelling need for new residual waste treatment infrastructure, of the type proposed at Portland Port, which is a proven, reliable and bankable technology that is both deliverable and capable of managing Dorset's residual waste in a sustainable way (with the recovery of heat and power).

#### **The export of Dorset's residual waste**

- 4.37 In the absence of any landfill capacity and dedicated waste management facilities for the treatment of residual waste and recovery of energy within the county, the main method of treatment for residual waste is export to landfill or energy recovery facilities elsewhere in the UK, or to energy recovery facilities in continental Europe.
- 4.38 Residual waste arisings within the Dorset Waste Plan area are currently managed through a combination of transfer stations, recovery facilities and landfill (disposal) sites. There is only one operational recovery facility in Dorset, the Canford Magna MBT which is co-located with a MRF and an inert recycling facility. Dorset, Bournemouth and Poole have been sending residual waste to this facility. Whilst the Canford Magana MBT facility is capable of pre-treating some of Dorset's waste it also produces an RDF material, which is then exported to Europe for use as a fuel.
- 4.39 The need for additional residual waste treatment capacity in Dorset has been evident for some time. In December 2015, the Dorset Waste Partnership agreed by committee 6 to extend two existing contracts that had been operating since 2011. One of these contracts was awarded to New Earth Solutions Limited (NES) for waste delivered to the MBT plant at Canford Magna, and the other was to Veolia ES Hampshire Limited (Veolia) for waste delivered to the Marchwood EfW facility.

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<sup>6</sup> DWP Joint Committee Papers 14 December 2015

- 4.40 These contracts were for an initial period of 6 years (to 31 August 2017) with an option to extend this for up to further 4 years (to 31 August 2021). The contracts initially had guaranteed annual tonnage of 20,000 tonnes and 10,000 tonnes respectively.
- 4.41 Whilst the Dorset Waste Partnership had already extended the NES contract to 2021, in order to address a shortfall of capacity, it agreed to extend the Veolia Marchwood contract to August 2021, increase the guaranteed tonnage to the Canford Magna MBT to 40,000 tpa from 25,000 tpa from April 2016, and begin a trial movement of residual waste from the Bridport WTS to an NES facility located at Avonmouth. It also planned to commence a procurement for additional residual waste treatment capacity.
- 4.42 In the continuing absence of residual waste treatment facilities in Dorset, the Dorset Waste Partnership has been undertaking a procurement exercise for an interim solution to manage the residual waste arising from the Dorset Council area, in advance of a future Dorset wide contract solution. In June 2020, Dorset Council announced that a contract had been awarded, for the period 2021 to 2028, for 60,000 tonnes of its residual waste to continue to be managed at the Canford Magna MBT facility. The interim contract was awarded to PandaGreen, who acquired the facility from NES.
- 4.43 In the short term at least, it is likely that the RDF material produced at Canford Magna will continue to be exported out of county. However, should planning permission be granted for the proposed Portland ERF this RDF would be managed at Portland, enabling Dorset's waste to be managed (and energy recovered) in Dorset in line with the self-sufficiency and proximity principles.
- 4.44 The Waste Local Plan 'Background Paper 3 – *Cross Boundary Movements of Waste, 2017*'<sup>7</sup> provides a view of the cross boundary movement of waste into and out of the county. Based on the EA Waste Data Interrogator (2015) around 332,400 tonnes of waste was exported out of county for management at other waste management facilities. Around 59% of this (188,800 tonnes) was managed in neighbouring authority areas with 42% being sent to Hampshire (including Southampton and Portsmouth). Around 5% of waste exports went to Somerset, 4% to Wiltshire and 8% to Devon, principally as a consequence of existing waste management contracts.
- 4.45 The Background Paper also notes that in 2015 some 312,000 tonnes of waste was imported to Dorset, and therefore Dorset is now a net waste exporter, exporting more than it imports. This position has arisen partly because of the closure of the county's landfill sites.
- 4.46 The Background Paper states that the Dorset Waste Partnership had a contract with Viridor to send waste to the Dimmer landfill site until 2018 and then to Walpole landfill site, both located in Somerset. There is also a contract with Veolia for managing residual waste at the Blue Haze landfill site in Hampshire to 2020 and at the Marchwood energy from waste facility in Southampton to 2021. Recent data provided by Dorset Council indicates that in 2018/19, 7,266 tonnes of

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<sup>7</sup> Background Paper 3 – Cross Boundary Movements of Waste, November 2017



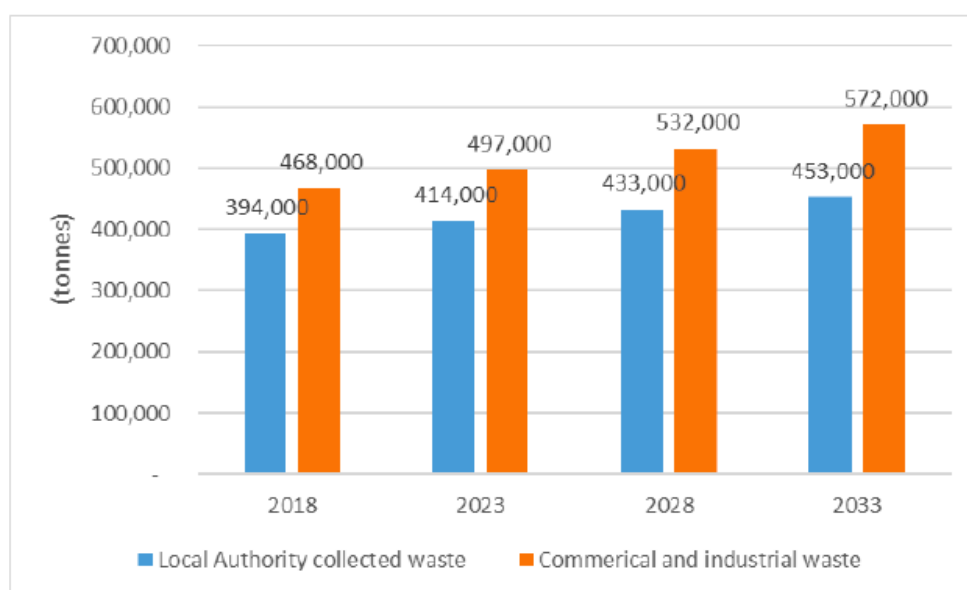
residual waste were sent to the Blue Haze landfill and 8,330 tonnes were sent to the Dimmer landfill.

- 4.47 In addition to the Canford Magna MBT facility, where RDF is exported to Europe, some of Poole's residual waste is sent to the Lakeside energy from waste facility in Slough. This is expected to continue under contract with Viridor until 2027. Bournemouth's residual waste is largely managed at the Canford Magna MBT facility under contract with PandaGreen to 2021, with RDF exported to Europe.
- 4.48 Based on the DEFRA data for 2018/2019 provided in table 5.3 above, the amount of residual local authority collected waste exported from Dorset for treatment was 161,328 tonnes. This figure comprises 51,344 tonnes of collected waste sent to landfill and 109,984 tonnes of collected waste sent for energy recovery. Given that there are currently no operational landfill or energy recovery sites in Dorset, it is understood that almost all of this collected residual waste is being exported out of the county.
- 4.49 In the absence of any immediate change the continued export of waste is likely to continue to involve transportation, in some cases over long distances. To say the least, this is very costly. It also raises issues of sustainability in respect to transporting waste over long distances for treatment and runs counter to waste being treated close to where it arises (proximity principle) and the aim for Dorset to become more self-sufficient.
- 4.50 It also raises the question as to whether Dorset waste authorities are prepared to take ownership of its waste management problem or continue to rely on others. In the absence of available landfill capacity within Dorset, combined with a lack of existing, or new waste management facilities coming forward on allocated sites, this makes the task of bringing in alternative means of managing waste to landfill and export a matter of great urgency.

#### **Future waste arisings in Dorset**

- 4.51 With regard to future levels of waste arisings, the assumption is that municipal waste arisings will grow. However, because of waste minimisation measures, amongst other things, the growth is unlikely to be at the levels that have historically been seen in Dorset. The figures are also based on achieving the national target of 50% for recycling and composting of municipal waste in 2020. Table 2 of the Dorset Waste Plan provides projections for future LACW and C&I waste.
- 4.52 The total waste arising figures for LACW and C&I waste in Dorset are predicted to continue to increase over the coming years reaching 453,000 tonnes for LACW and 572,000 tonnes for C&I wastes (1,025,000 tonnes in total) by the end of the Plan period 2033.
- 4.53 The future projections for LACW and C&I wastes are shown graphically in figure 5.5 below.

Figure 5.5: Projected total waste arisings in Dorset to 2033



Source: Source ERM Summary Report (based on table 2 Bournemouth, Christchurch, Dorset and Poole Waste Local Plan, 2019)

- 4.54 The Dorset Waste Plan states, as set out in table 7, that Dorset’s projected arisings/need for non-hazardous residual waste treatment will increase further to 320,000 tonnes in 2023, with an identified shortfall of 137,000 tonnes of treatment capacity. The projected arisings/need figures rise further by 2028 to 339,000 tonnes with an identified shortfall of 214,000 tonnes, and again by 2033 to 359,000 tonnes, with identified shortfall of 234,000 tonnes of residual waste treatment capacity.
- 4.55 The Dorset Waste Plan also states (paragraph 7.76) that three sites are specifically allocated for the provision of new facilities for the management of residual wastes, plus additional capacity at the existing Canford Magna MBT. It also states that the total future capacity of these four sites is 385,000 tonnes per annum, exceeding the plan’s identified need. However, the applicant’s assessment of allocated sites shows that these are highly constrained, such that the required treatment capacity may never come forward to meet need.
- 4.56 With regard to assessments of future C&I waste arisings, these cover a much wider range and involve a greater degree of uncertainty. In part, this reflects the difficulty obtaining reliable figures from a large number of businesses of arisings and measures that they have taken for managing their waste. This uncertainty over levels and trends in C&I waste arisings points to the importance of not taking an overly optimistic view of the amount of future C&I waste arisings and the amount of residual waste requiring treatment or disposal that are likely to occur.
- 4.57 Nonetheless, there is likely to be a continuing need for the treatment of residual C&I wastes, and the Dorset Waste Plan projections for a significant future need for non-hazardous residual waste capacity and shortfall of capacity include for some residual C&I wastes.

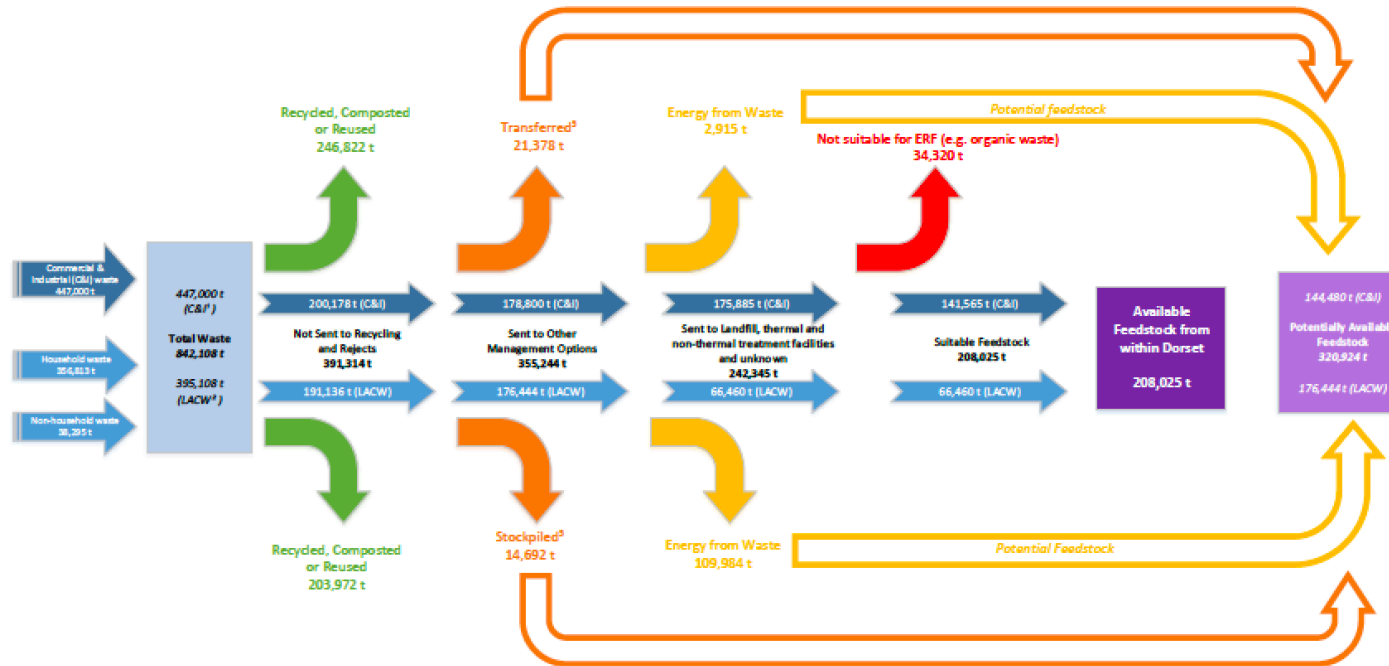
## **Future proofing and value for money**

- 4.58 In order to meet Dorset's existing and projected increase in residual waste, it will be necessary to adopt an approach that is sufficiently flexible to adjust to changing waste market conditions, future proofing. Dorset has achieved a good recycling record and aims to further improve the amount of waste that is recycled and re-used. Unlike facilities delivered under PFI/PPP to serve a single local authority waste contract for 25-30 years, the proposed merchant ERF will be commercially robust being capable of adapting to future changes, such as more recycling varying waste composition. The proposed ERF would therefore meet Dorset's need for flexibility.
- 4.59 Dorset exports almost all of its residual waste out of county, and some out of the country. The continuation of this practice is not only contrary to the self-sufficiency and proximity principles, but exposes Dorset's waste management system to higher levels of risk and cost associated as the ability to export residual waste lies in the hands of others.
- 4.60 The cost of exporting waste is relatively high compared to managing waste more locally. These costs are likely to increase as demand for external residual waste treatment capacity outside of Dorset (landfill or energy recovery) increases and available capacity decreases. Furthermore, the costs associated exporting waste to Europe, as a result of import taxes on residual waste, are likely to be passed on to waste exporters, in part or in full. These factors reinforce the need for Dorset to secure new residual waste management infrastructure to safeguard against significant future increases in waste management costs, and ensure that local tax payers are receiving maximum value for their money. In doing so local authorities can also divert resources for other important purposes.

## **Residual waste potentially available for energy recovery**

- 4.61 Irrespective of predicted growth in residual waste arisings and the need for additional treatment capacity, analysis of LACW and C&I waste statistics indicate that a substantial amount of residual waste is collected by local authorities and other private sector waste companies that could provide suitable feedstock for the Portland ERF.
- 4.62 Analysis undertaken by ERM indicates that the total amount of Dorset's residual waste (LACW and C&I), currently not recycled, composted or re-used, or sent elsewhere for energy recovery, which is potentially available as feedstock for the ERF is around 208,000 tonnes. If all of the residual waste being sent outside of Dorset for energy recovery (or other) was to be retained in Dorset the amount of feedstock suitable for the Portland ERF could be around 321,000 tonnes. This is illustrated in figure 4.6 below.
- 4.63 The waste data statistics for Dorset indicate that there is a large amount of residual waste arising in Dorset that could provide feedstock for the Portland ERF, which exceeds the proposed nominal treatment capacity of 183,000 tpa. When added to the substantial amounts of residual waste that would be available from within the wider catchment area by road and from the transport of RDF material to Portland by sea, it is evident that the amount of residual waste requiring treatment would vastly exceed the proposed treatment capacity of the proposed Portland ERF.

Figure 4.6: Total estimated Dorset residual waste arisings potentially available for energy recovery



**Footnotes**

1. There are currently no systems in the UK that require C&I waste to be reported by type, sector and management method therefore the data used, from 2015, is the most up-to-date figures available. This figure was taken from the Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019. The management method and unsuitable feedstock figures have been estimated using the percentage split from DEFRA's Commercial and Industrial Waste Survey 2009 figures, also provided in the Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019: Background paper 1.
2. The LACW waste figures have been taken from dataset ENV18 - Local authority collected waste: annual results tables published by DEFRA for financial year 2018/19. This includes the Household waste and Non-household waste figures.
3. Even though the Transferred and Stockpiled streams are reasonable prospects for the proposed plant, not all this waste will be suitable for the Energy Recovery Facility, therefore these waste streams have been removed from the 'Potentially Available Feedstock' calculation.

## Overall conclusions

4.64 Based on Dorset's current and predicted future residual waste arisings and approach to waste management the following conclusions can be drawn in respect to the need for the Portland ERF:

- Whilst Dorset has achieved a relatively high recycling rate, around 46% of its collected waste is not recycled and a large volume of residual waste remains which requires treatment. There is a need to ensure that this is managed in a more sustainable way
- Dorset sends around 14% of its residual waste to landfill. There is a need to divert more waste away from landfill, the least sustainable option, and move waste management further up the waste hierarchy via energy recovery
- There are no ERF's in the county capable of managing Dorset's residual waste. Therefore, most of this is being exported out of the county to landfill in neighbouring authority areas, other energy recovery facilities in Hampshire and Slough, or in the case of RDF exported out of the country to Europe. It is to meet the waste local plan aim to, as far as practicable, ensure that there is sufficient capacity available within the plan area to deal with its waste arisings, in accordance with the self-sufficiency principle. This would also provide for treatment of more of its residual waste in Dorset closer to where it arises, in accordance with the proximity principle
- Large volumes of C&I wastes are generated in the county, with significant volumes being exported to landfill out of the county. This is not sustainable and a proportion of this waste is deemed to be suitable for energy recovery. A need exists for an energy recovery facility in Dorset that would be capable of diverting some of this waste away from landfill to energy recovery and reduce waste exports, in accordance with the waste hierarchy, self-sufficiency and proximity principles
- Successive Dorset Waste Plans have been unable to deliver any significant new residual waste management infrastructure over recent years. These plans have focused on delivering materials recovery facilities and other options such as advanced treatment technologies (the latter having not been successful) rather than traditional energy from waste. As a consequence of this failure to deliver new infrastructure, and the recent closure of its landfill sites, Dorset is now heavily reliant upon the export of its residual waste out of county and also out of the country. There is a need for a proven, reliable and bankable ERF that is deliverable and capable of meeting Dorset's needs in the long term
- The Dorset Waste Plan predicts that without any action there will be an increasing shortfall in residual waste treatment capacity reaching 234,000 tonnes by 2033. There is an urgent need for new waste management infrastructure to meet this significant projected shortfall
- Four sites are identified in the Dorset Waste Plan for new residual waste treatment capacity, with a combined assessed capacity of 385,000 tonnes to provide flexibility for non-delivery. However, all of these sites are subject to significant planning and environmental constraints. As such, they are either

unlikely to come forward at all and deliver any capacity, or could only accommodate small scale facilities that are less likely to be viable and deliverable. A need exists for a large-scale ERF facility on the application site, which is viable and deliverable

- There is a need to deliver new residual waste treatment infrastructure of the type proposed, which is sufficiently flexible to meet Dorset's existing and future requirements, and which can also reduce the cost and risk to local tax payers associated with waste management by becoming more self-sufficient.

## 5.0 NATIONAL AND REGIONAL WASTE

### Introduction

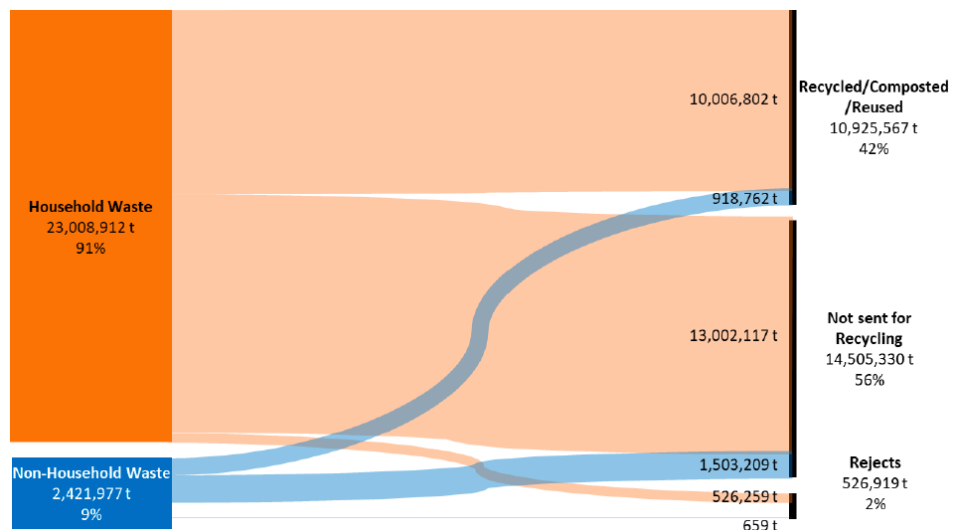
- 5.1 Whilst good progress has been made over recent years to recycle more of our waste and reduce the amount of waste sent to landfill, there remains a national need to manage waste in a more sustainable way. To achieve this, more infrastructure of all types is required to ensure that waste management practice is pushed as far as possible up the waste hierarchy.
- 5.2 The Portland ERF is intended to manage residual household waste (in the form of RDF), which has been subject to reprocessing to remove all practicably recyclable materials. Therefore, whilst attention is focused here on household waste, the facility will also be capable of managing C&I wastes, with a similar composition to household waste derived materials and this is also considered within this chapter.

### National waste context

#### Collected waste

- 5.3 According to the DEFRA Data set ENV18 – LACW, 2018/19 financial year<sup>8</sup>
- In 2018/19 a total of 25,430,889 tonnes of waste was collected by local authorities in England. Of this, 91% (23,008,912 tonnes) was household waste and 9% (2,421,977) was non-household waste
  - Of the total waste collected by local authorities 42% (10,925,576 tonnes) was sent for recycling, composting or reuse; 56% (14,505,330 tonnes) was not sent for recycling; and there was an estimated 526,919 tonnes of rejects (2%)

Figure 5.1: Local authority collected waste split by recycled or not recycled

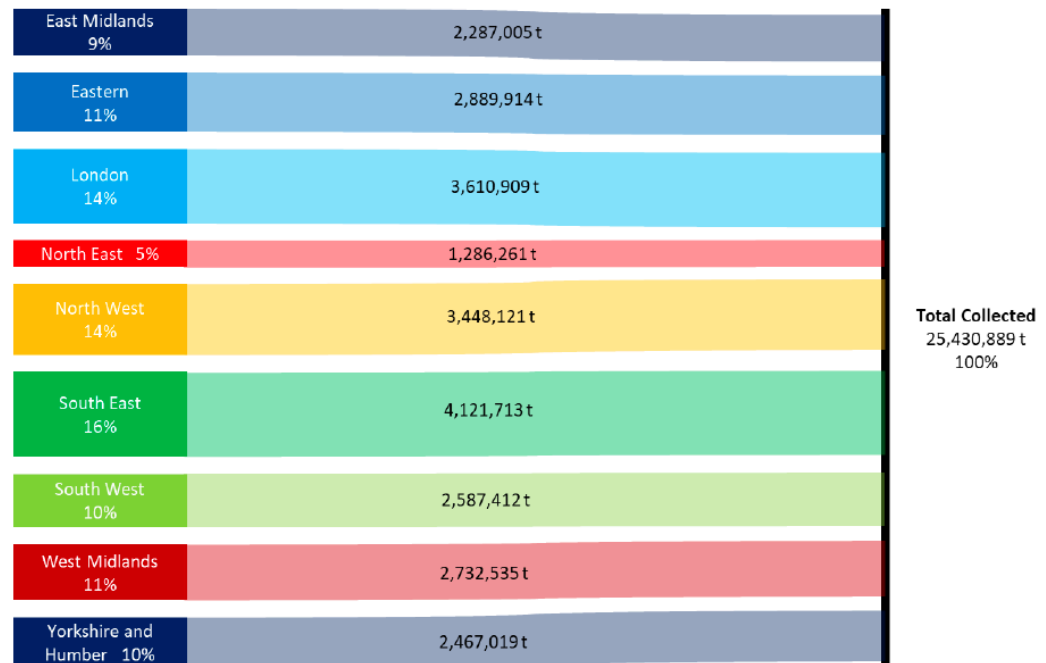


Source ERM Summary Report (based on DEFRA ENV18 data)

<sup>8</sup> <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>

- The regional breakdown for total local authority collected waste is shown below in figure 5.2. The highest amount of waste was collected by south east local authorities, making up 16% of the total. Next was London and the north west, each accounting for 14% of the total. The south west region accounted for 10% of the total collected (approximately 2.6 Mt).

Figure 5.2: LACW breakdown by region



Source ERM Summary Report (based on DEFRA ENV18 data)

- In terms of the split between household and non-household waste, in every region household waste accounted for more than 82% of the total, with the highest proportion being 94%. Furthermore, all regions send less than 50% of these wastes to recycling/composting/reuse. The proportion in the south west is the largest, at 49% of the total. London has the lowest proportion, with only 30% sent for recycling/composting/reuse

## The fate of waste

5.4 According to the DEFRA Data set ENV18 – LACW, 2018/19 financial year<sup>9</sup>:

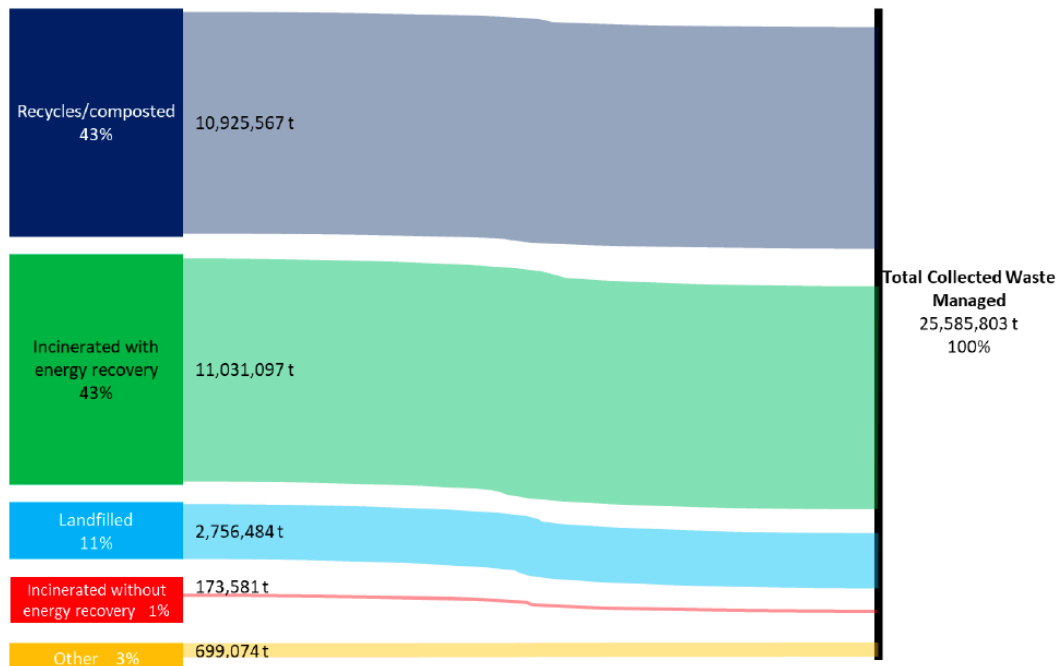
- The total quantity of collected waste managed in England was 25,585,803 Mt 10. Whilst the management destination of the waste is unknown, the breakdown by the ultimate fate of waste is as follows and is also shown graphically in figure 5.3.

<sup>9</sup> <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>

<sup>10</sup> Total LACW managed may not match total Local Authority collected waste collected due to stockpiling of waste between reporting periods and rejects.



Figure 5.3: LACW split by ultimate fate



Source ERM Summary Report (based on DEFRA ENV18 data)

5.5 According to the DEFRA UK Statistics on Waste (March 2020):

- England generated 33.1 Mt of C&I wastes in 2016
- the latest estimate for C&I generation in England was around 36.1 Mt in 2017 and 37.2 Mt in 2018.

5.6 These most recent waste data figures for England demonstrate that:

- Whilst the overall waste collected from households is beginning to reduce, there remains a very significant amount of LACW that is not sent for recycling, composting or re-use and requires treatment (14.5 Mt). This residual waste is most likely sent for energy recovery or to landfill
- Whilst the disposal of waste to landfill is slowly decreasing there remains a substantial amount of local authority collected waste (2.8Mt) that is still disposed of to landfill, representing around 11% of the total amount of collected waste, some of which could have been sent for energy recovery
- The thermal treatment of waste represents a significant, reliable and deliverable method for managing residual wastes collected by local authorities across England (43.1%) and is playing an important role in helping divert waste from landfill
- There are significant volumes of C&I wastes being generated in the UK and especially England that requires treatment, and this amount is predicted to increase.

5.7 These statistics demonstrate that nationally high volumes of residual waste are still being generated, and despite efforts to reduce waste production, increase re-use

and recycling and recover energy from waste, significant volumes of residual wastes (arising from both municipal and C&I sources) are still being sent to landfill for disposal.

5.8 Whilst this remains the case, there is a clear need for the provision of additional waste management infrastructure in England that is capable of recovering energy from residual wastes that cannot practicably be recycled, and diverting this material away from landfill.

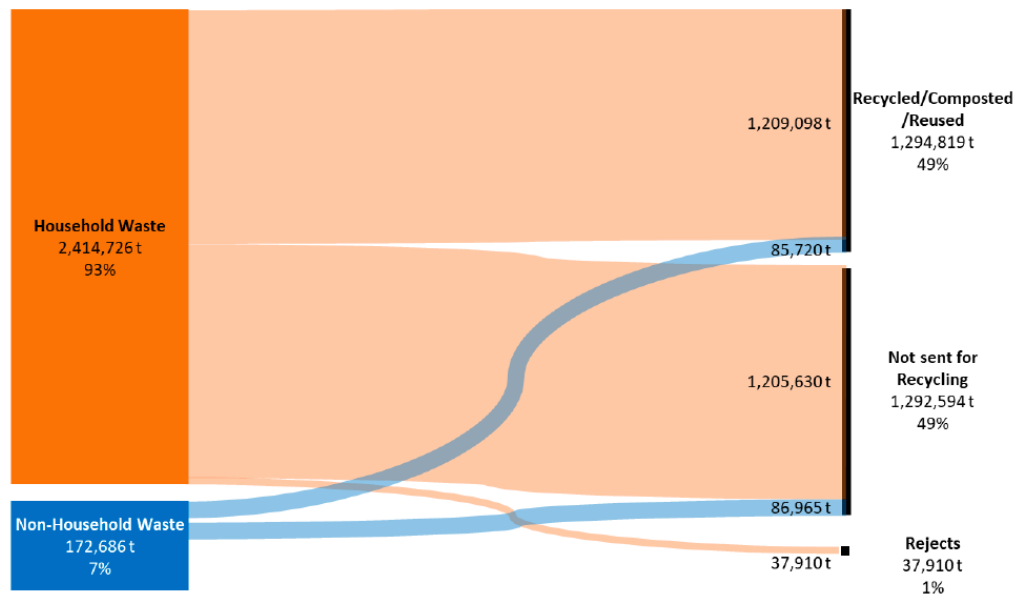
**Regional waste context**

**Collected waste**

5.9 According to the DEFRA Data set ENV18 – LACW, 2018/19 financial year<sup>11</sup>:

- In 2018/19, a total of 2,587,412 tonnes of waste was collected by local authorities in the south west region. Of this, 93% was household waste and 7% was non-household waste, as presented graphically in figure 5.4 below. Of the total, 49% was sent for recycling, composting or reuse; 59% was not sent for recycling; and there was an estimated 37,910 tonnes of rejects

Figure 5.4: LACW split by ultimate fate



Source ERM Summary Report (based on DEFRA ENV18 data)

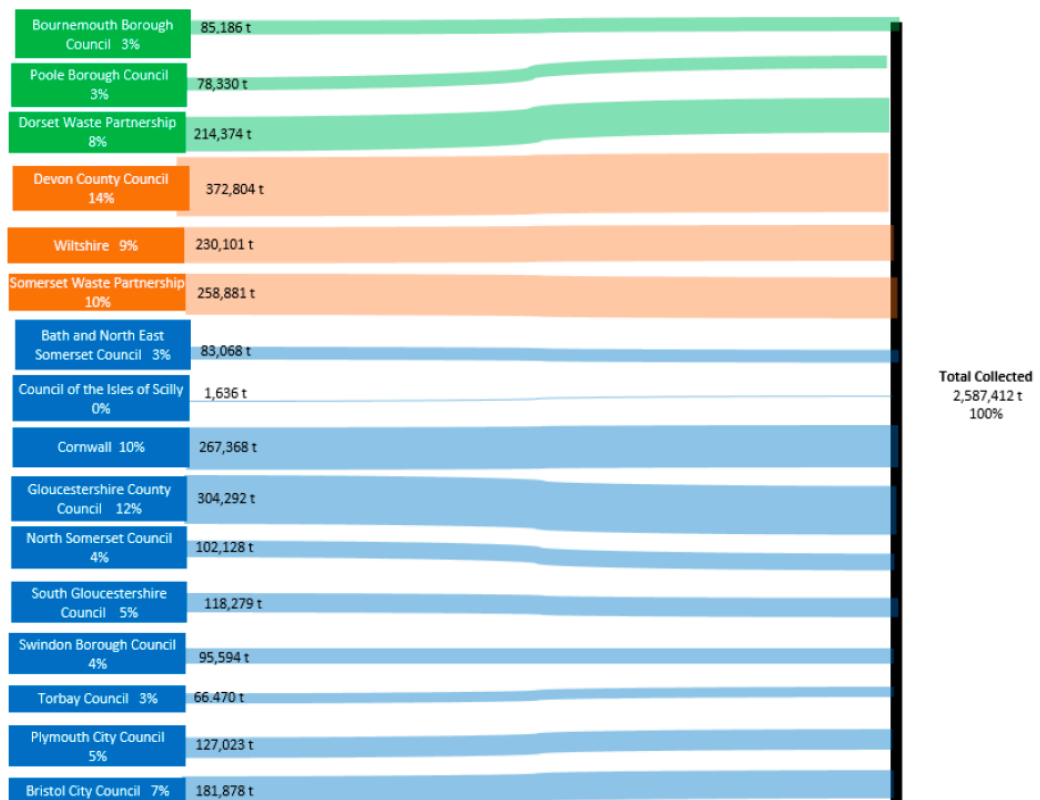
- The total waste collected in the south west region was 2,587,415 tonnes (excluding rejects); of this 2,414,726 tonnes was household waste and 172,686 tonnes was non-household waste. Of this:
  - Devon County Council collected 372,804 tonnes; 355,195 tonnes was household and 17,609 tonnes was non-household waste.
  - Somerset Waste Partnership collected 258,882 tonnes; 252,991 tonnes was household and 5,890 tonnes was non-household waste

<sup>11</sup> <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>

- Wiltshire collected 230,101 tonnes; 213,220 tonnes was household and 16,881 tonnes was non-household waste
- Dorset, encompassing Dorset Waste Partnership, Bournemouth Borough Council and Poole Borough Council, collected 377,891 tonnes; 339,595 tonnes was household waste and 38,295 tonnes was non-household waste.

5.10 Figure 5.5 shows the regional breakdown for total local authority collected wastes for the south west region. The local waste authorities highlighted in green represent the Dorset context and account for 14% of all collected waste on the south west, and this is explored more in the chapter 6. Those highlighted in orange represent those principal waste local authorities within a 3-hour HGV drive time radius, and accounting for 33% of the total waste collected in the region. Other local waste authorities are highlighted in blue, and account for 52% of the total waste collected. Devon County Council collected the largest proportion of waste, accounting for 14%. Next was Gloucestershire County Council, accounting for 12%, and then Cornwall and the Somerset Waste Partnership, each accounting for 10%.

Figure 5.5: LACW regionally split by authority



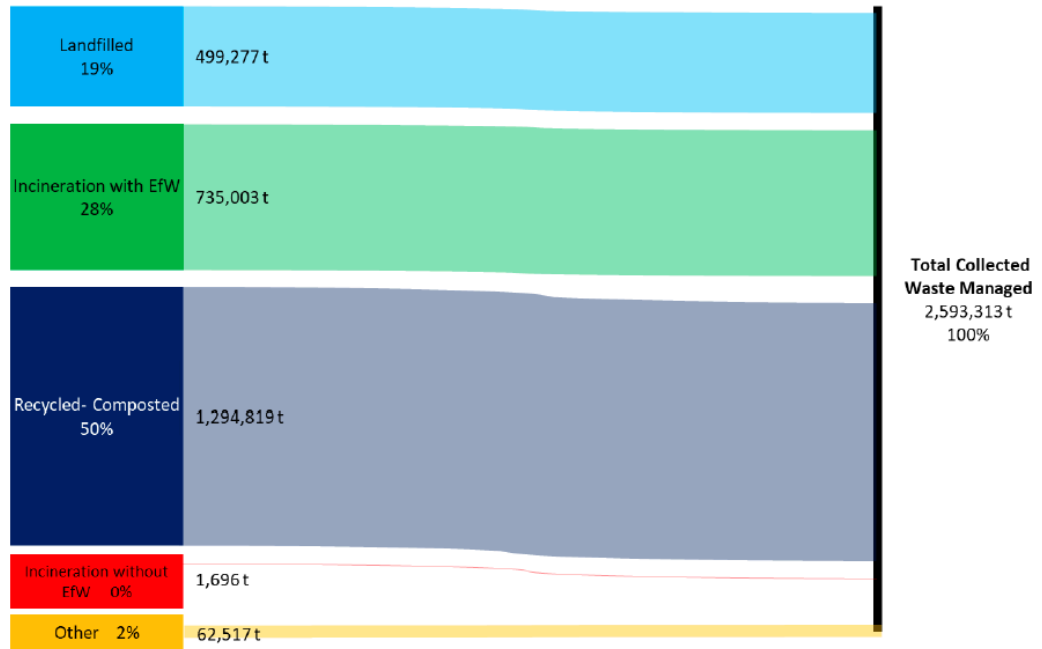
Source ERM Summary Report (based on DEFRA ENV18 data)

### The fate of waste

5.11 The total quantity of collected waste managed via different routes in the south west region was 2,593,313 tonnes. This figure does not match that quoted above for total local authority collected waste, due to the stockpiling of waste between

reporting periods. Whilst the management destination of the waste is unknown, the breakdown by the ultimate fate of waste is shown graphically in figure 5.6.

Figure 5.6: LACW regionally split by ultimate fate



Source ERM Summary Report (based on DEFRA ENV18 data)

5.12 Table 5.1 below shows the amount and relative percentage of local authority collected waste (2018/19), managed by method, for the south west region and England for comparative purposes.

Table 5.1: Management of LACW 2018/19 England and the south west region

Method	South west region 2018/19 (thousands of tonnes and %)	England 2018/19 (thousands of tonnes and %)
Landfill	499	2,756
(percentage)	19.3%	10.8%
Incineration with EfW	735	11,031
(percentage)	28.3%	43.1%
Incineration without EfW	2	174
(percentage)	0.1%	0.7%
Recycled-composted	1,295	10,926
(percentage)	49.9%	42.7%
Other	63	699
(percentage)	2.4%	2.7%
<b>Total</b>	<b>2,593</b>	<b>25,586</b>

Source: Table 2a, LACW generation from April 2000 to March 2019 (England and regions) and local authority data, DEFRA

5.13 DEFRA 2018/19 regional data is available for household recycling rates and the proportion of local authority collected waste that is sent to landfill. The statistics for the south west region compared to England and other regions are shown in tables 5.2 and 5.3 for comparison.

*Table 5.2: Regional household recycling rates 2018/19*

Region	Regional household recycling rates 2018/19 (%)
North East	35.1
North West	45.3
Yorkshire and the Humber	42.9
East Midlands	43.6
West Midlands	39.9
Eastern	48.5
London	33.4
South East	47.2
<i>South West</i>	<i>50.1</i>
England	43.5

*Source: table 3a, LACW generation from April 2000 to March 2019 (England and regions) and local authority data, DEFRA*

*Table 5.3: Local authority collected waste sent to landfill 2018/19*

Region	Percentage of local authority collected waste set to landfill 2018/19 (%)
North East	7.1
North West	12.3
Yorkshire and the Humber	5.6
East Midlands	16.4
West Midlands	7.3
Eastern	14.0
London	7.0
South East	8.7
<i>South West</i>	<i>19.3</i>
England	10.8

*Source: table 3a, LACW generation from April 2000 to March 2019 (England and regions) and local authority data April 2018 to March 2019, DEFRA*

5.14 A number of key conclusions can be drawn from the DEFRA derived regional data in respect to need. These are:

- The south west region generates large volumes of waste that is collected by local authorities, approx. 2.6Mt per annum (representing 10% of the total collected waste in England) with the majority (93%) being household waste
- The south west region is the best performing region in respect to household waste recycling rates (50.1%), compared to the worst performing region London (33.4%) and England (43.5%) as a whole

- The south west region still sends around 0.5Mt of local authority collected waste to landfill each year
  - In percentage terms the south west region therefore performs the worst of any region in terms of the amount of local authority collected waste that is sent to landfill (19.1%), compared to 10.8% for England
  - The south west region sends much less of its local authority collected waste for incineration with energy recovery (28.3%) than England (43.1%).
- 5.15 These statistics show that the south west region is sending a large amount of residual waste to landfill and in percentage terms it is the worst performing region in England in respect to landfill.
- 5.16 Given that the south west region is the best performing region for recycling, but also has a much lower rate of energy recovery than England, the conclusion can be drawn that there is still a substantial regional need to divert residual waste from landfill towards energy recovery from residual waste and that this can be achieved without having an adverse impact on the existing high recycling rates.

#### The national export of RDF<sup>12</sup>

- 5.17 As the UK has sought to reduce the amount of residual waste disposed of to landfill to help meet European landfill diversion targets, there has been considerable investment in waste management facilities, such as mechanical and biological treatment (MBT) that process wastes to extract recyclable materials and produce a residual material known as refuse derived fuel (RDF) or solid recovered fuels (SRF), the latter having a controlled standard calorific value. This comprises those materials that cannot be practicably be recovered and recycled and represents a residual waste from which no further practicable use can be derived other than through energy recovery or alternatively via final disposal to landfill.
- 5.18 As many waste authorities in the UK have turned to the use of MBT technologies, an export market has developed with significant quantities of RDF and SRF being exported from the UK to other countries in mainland Europe, notably the Netherlands, Sweden, Germany, Denmark and Norway. The exported RDF and SRF material is then typically combusted in energy recovery plant and other facilities with capability to make use of these materials as fuel to recover heat and energy for use in many applications.
- 5.19 Data sourced from the Environment Agency Waste Data Interrogator 2018 (England) confirms nationally that:
- England generated 6.4 Mt of RDF waste in 2018. The north west (1.4 Mt), London (1.18 Mt) and Yorkshire & Humber (893,000 tonnes) accounted for the majority
  - 2.8 Mt of this was exported outside of the UK for management and 3.5 Mt was managed within England with around 11,000 tonnes going to the south west region

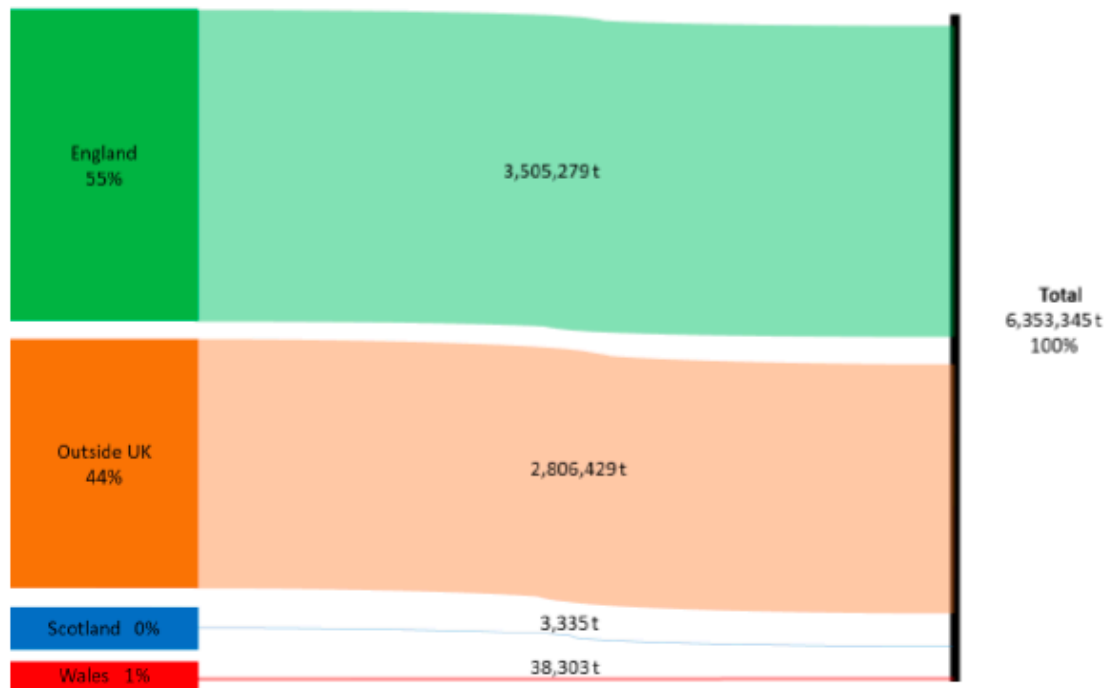
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<sup>12</sup> RDF waste = all wastes categorised under EWC as '19 12 10 combustible waste (refuse derived fuels)'

- 3.1 Mt was sent to treatment facilities, mainly incinerators, the remainder was sent to recovery facilities (291,000), landfill (64,000) or was classified as 'other'.

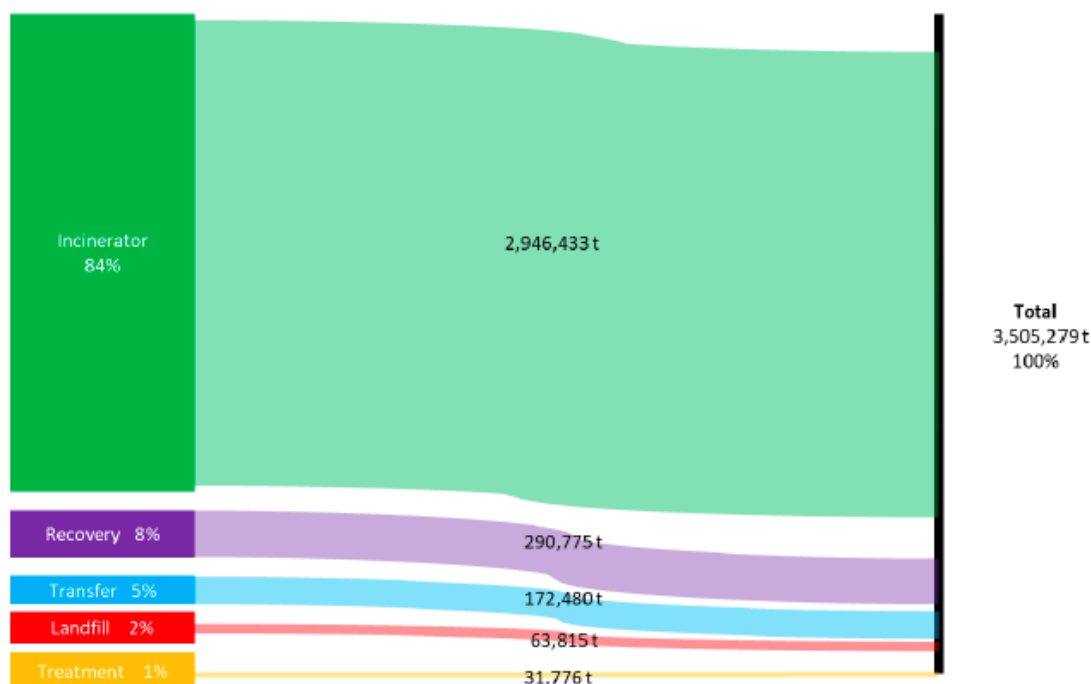
5.20 Figures 5.7 and 5.8 below show graphically the proportion of RDF exported outside of the UK and managed within other parts of the UK and the breakdown by fate of RDF waste managed in England.

Figure 5.7: Distribution of RDF management within the UK and export



Source: Environment Agency Waste Data Interrogator 2018

Figure 5.8: The management fate of RDF within England



Source: Environment Agency Waste Data Interrogator 2018

5.21 Data sourced from the Footprint Services RDF Export Dashboard Overview statistics for RDF exports from England sets out the annual position based on the Reporting Month March 2020. This indicated that:

- Total exports were 2,450,000 tonnes: of which 2,120,000 tonnes was RDF; and 333,000 tonnes was SRF
- Of the total, 981,000 tonnes was exported to the Netherlands, 575,000 tonnes to Sweden, 367,000 to Germany, 132,000 to Norway and 107,000 tonnes to Denmark
- For the prior 12 months, 3,118,911 tonnes of RDF/SRF was exported. The top three destinations for this material were the Netherlands (1,306,397 tonnes), Sweden (574,595 tonnes) and Germany (470,699 tonnes), with the remainder going to 14 other countries in Europe and elsewhere.

5.22 Whilst large volumes of RDF/SRF are still exported out of the UK to Europe this has declined over recent years. The export figure of 2.45 Mt for the reporting month of March 2020 is significantly down from year on year figures for March 2018 (3.4 Mt) and March 2019 (3.1 Mt).

5.23 The decline in export of RDF to Europe could be attributed in part to European plants reaching capacity and uncertainty over the future of this exporting as a result of Brexit and future negotiation. However, perhaps more significant in the longer term is the introduction of a 32 euro per tonne import tax on RDF introduced by the Netherlands Government, together with the introduction in Sweden of a 75Kr (£6) per tonne tax on combustion of imported waste. The

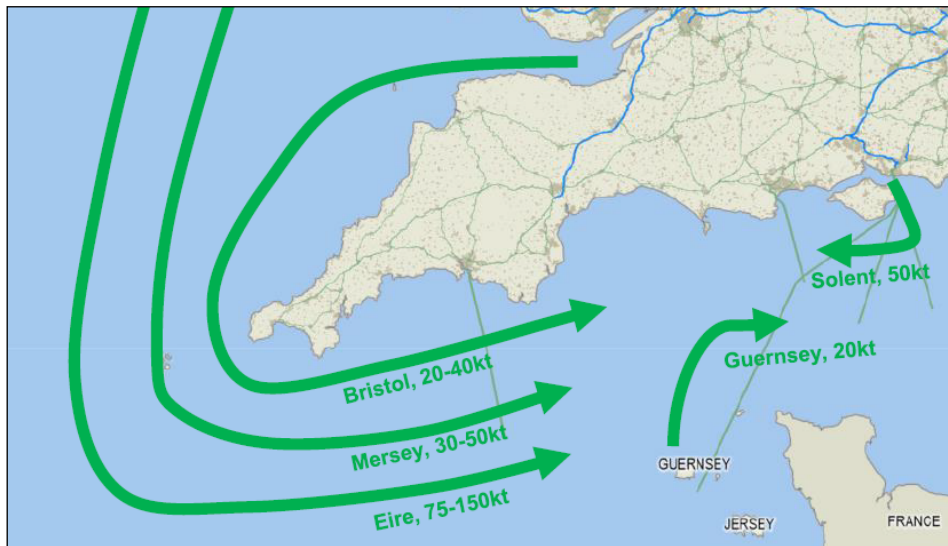


imposition of taxes by these countries, and any other countries that might also do so in the future, is likely to lead to higher costs for RDF exporters. In the UK these costs are likely to be passed on to local waste authorities who are ultimately exporting waste.

### Exported RDF passing Portland Port

- 5.24 Analysis undertaken by the independent waste consultancy Tolvik Consulting for the applicant shows that there is a steady stream of RDF that is currently exported from locations in England and Eire via ship which currently passes through the English Channel in the vicinity of Portland Port.
- 5.25 This is represented in figure 5.9 below which shows these volumes of RDF (in an estimated range 195,000 and 310,000 tonnes, which could provide suitable feedstock for the Portland ERF).

Figure 5.9: Estimated RDF movements along the English Channel



Source: Tolvik Consulting

A number of conclusions can be drawn from these waste data sources in respect to this need case:

- The UK continues to export large volumes of residual waste as RDF to other European countries over long distances, which could instead be managed in the UK, supporting the self-sufficiency and proximity principles
- This trend for export is beginning to decline as a result of political and fiscal policies that are together creating uncertainty and additional cost in respect to the future viability of the export market
- The decline in the export of RDF is likely to require more of this residual waste material to be managed in the UK and more energy recovery facilities to be built to manage this waste
- A significant volume of RDF material is already being exported from England and Eire, moving through the English Channel in the vicinity of Portland Port

- It would be preferable for energy to be recovered from UK residual waste for the benefit of UK residents, rather than for this to be sent to European energy recovery facilities.

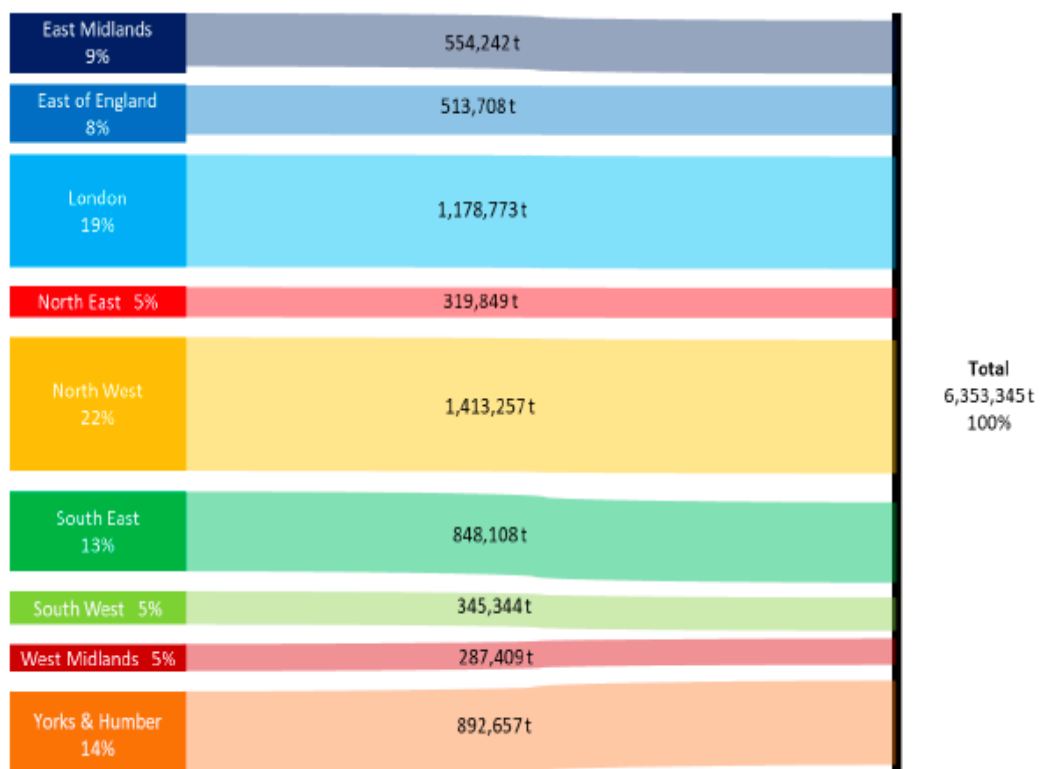
### The regional export of RDF<sup>13</sup>

5.26 Data sourced from the Environment Agency Waste Data Interrogator 2018 (England) confirms that regionally:

- The south west region generated around 345,000 tonnes, the majority in Bristol (199,000 tonnes), then Poole (89,000), Wiltshire (29,000) and Swindon (27,000 tonnes) and remainder in Somerset
- The majority of this (81%) was exported outside of the UK for management, 281,000 tonnes. The remainder was managed in England, with only 9,200 tonnes (3%) staying within the region
- 286,000 tonnes was sent to treatment facilities (mainly incinerators), 57,800 went to recovery facilities and 1,200 tonnes went to landfill.

5.27 Figures 5.10, 5.11 and 5.12 below show graphically the regional breakdown for the origin of RDF across England, the regional breakdown of RDF arisings by area and the destination of the RDF that is produced in the south west region.

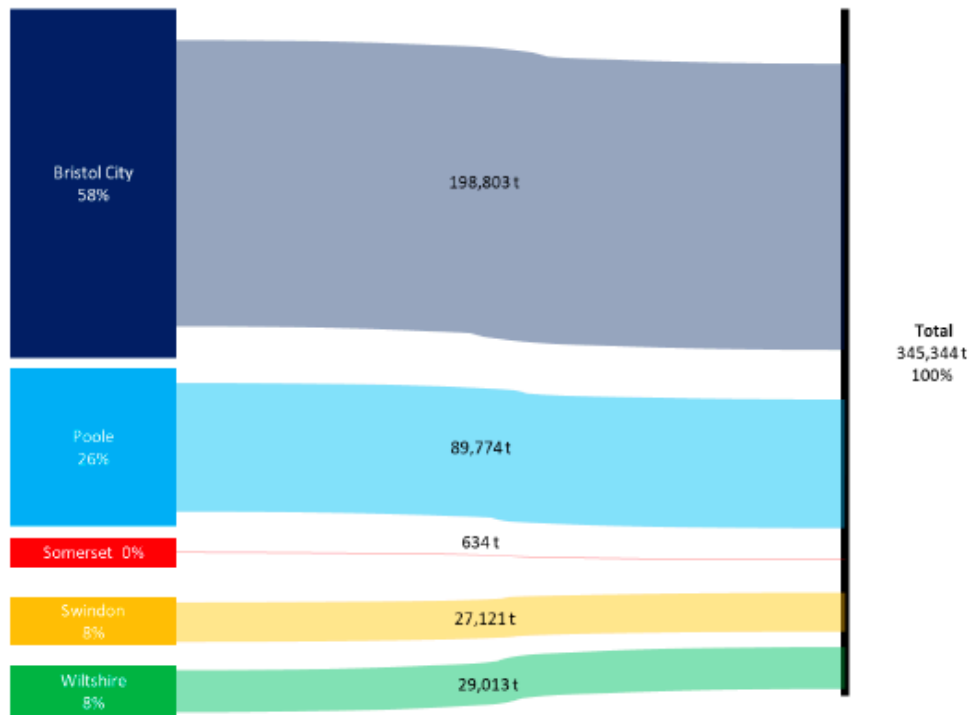
Figure 5.10: Breakdown of RDF generation by region



Source: Environment Agency Waste Data Interrogator 2018

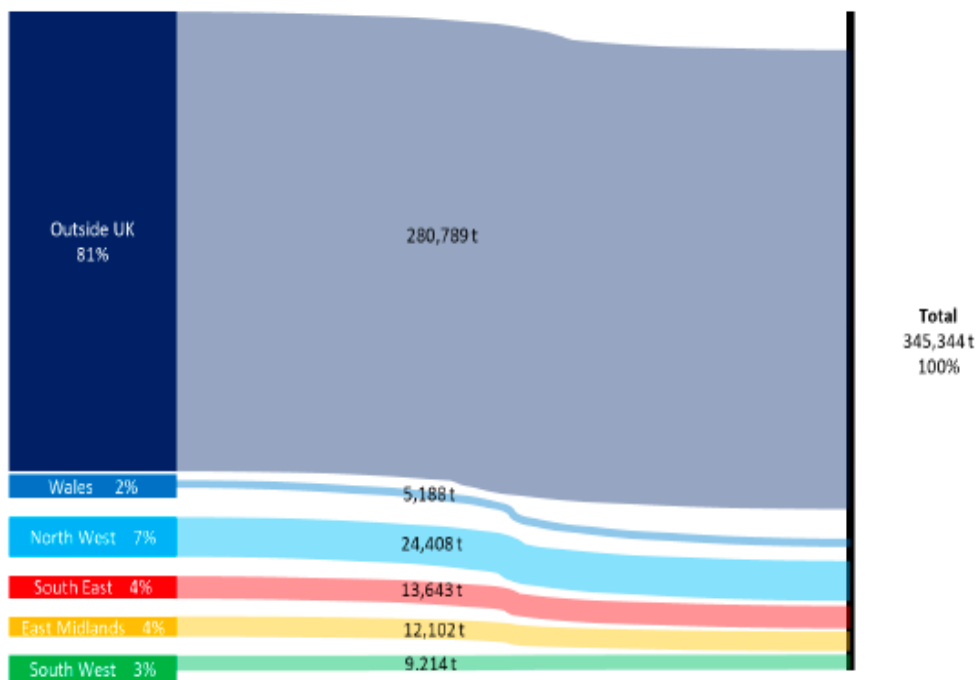
<sup>13</sup> RDF waste = all wastes categorised under EWC as '19 12 10 combustible waste (refuse derived fuels)'

Figure 5.11: South west regional breakdown of RDF arisings by area



Source: Environment Agency Waste Data Interrogator 2018

Figure 5.12: Destination of RDF produced in the south west region



Source: Environment Agency Waste Data Interrogator 2018

5.28 A number of conclusions can be drawn from the regional waste data in respect to this need case:

- Whilst the south west region produces a significant amount of RDF (345,000 tonnes) annually, with a proportion of this being produced in Dorset (Poole), the vast majority is exported out of the UK for use in Europe with little retained and managed in the region
- The south west region lacks capacity and facilities designed to recover energy from the RDF produced in the region and as a consequence most of the RDF produced is exported.

#### **Projected regional residual waste capacity requirement**

5.29 The South West Waste Technical Advisory Board (SWWTAB) jointly prepared a paper entitled Residual Waste Management in the South West (October 2017). Its purpose was to consider how residual waste management across the south west region is likely to evolve over forthcoming years and the implications that this will have for policy makers.

5.30 In order to provide a context for the need for residual waste treatment capacity, the SWWTAB considered the amount of residual waste (requiring energy recovery or landfill), that will be generated in the south west region to 2027/28.

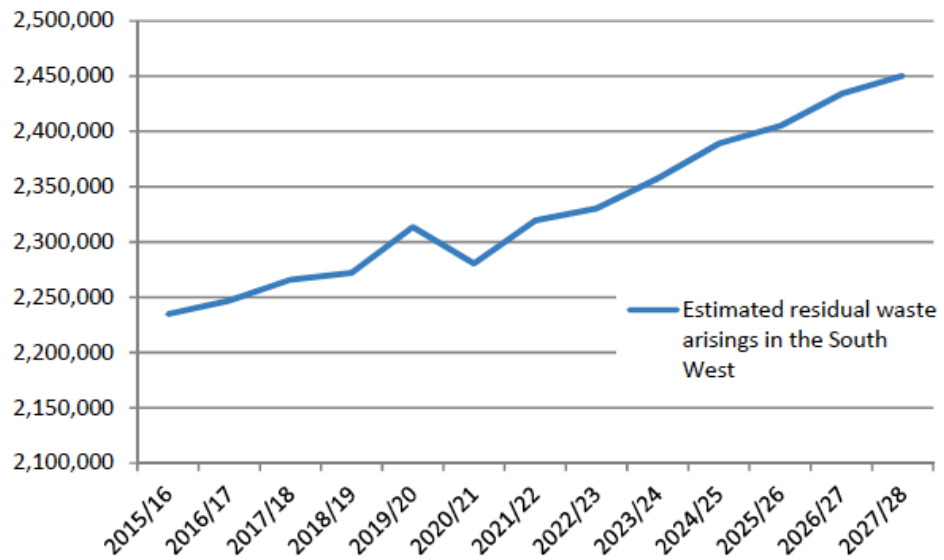
5.31 The paper formed part of the evidence base for the draft Dorset Waste Plan in respect to regional residual waste growth and treatment capacity, and its projections for residual waste growth were informed by projections provided by each of the relevant waste planning authorities, which included Dorset County, Bournemouth and Poole.

5.32 The SWWTAB paper indicates that the region will generate about 2.45 million tonnes of residual waste per year which will require management by either energy recovery or landfill. This figure roughly represents a 10% increase from about 2.23 million tonnes in 2015.

5.33 In some cases the data excludes commercial and industrial waste as this was not available for certain waste planning authorities. As such, the paper indicates the total amount of residual waste requiring management over this period is likely to be even higher.

5.34 All waste planning authorities, apart from Somerset predicted, an increase in residual waste. The projected overall quantity of residual waste (requiring energy recovery or landfill) generated in the south west region to 2027/28 is shown in figure 5.13.

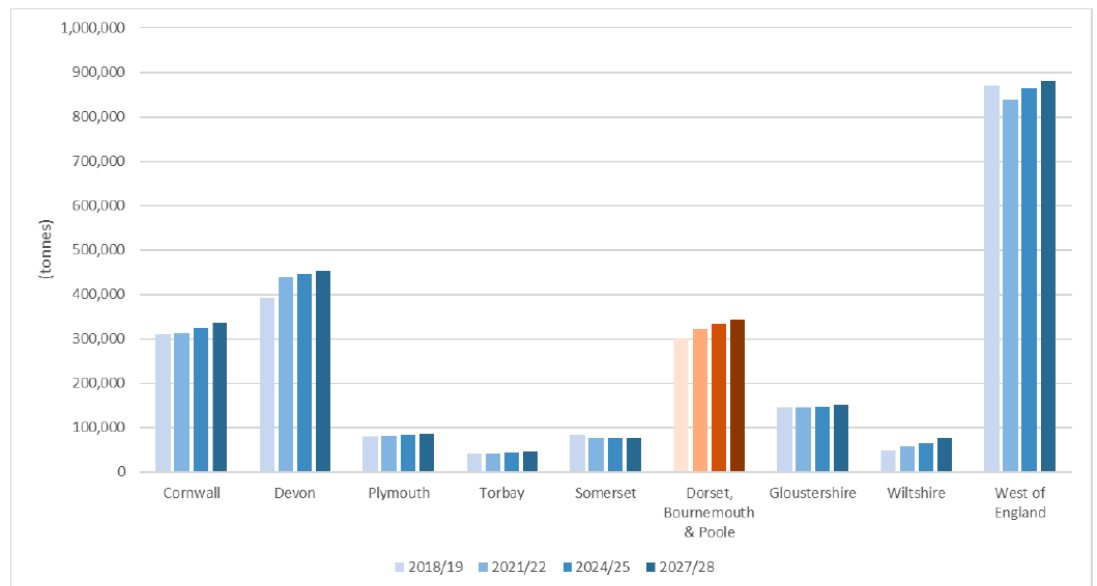
Figure 5.13: Total estimated residual waste in the south west up to 2028



Source: Figure 5, Regional Waste Management in the South West, SWWTAB, October 2017

- 5.35 The expected growth in residual waste requiring treatment by either energy from waste or landfill for Dorset and its neighbouring waste planning authority areas to 2027/28 is shown in figure 5.14.

Figure 5.14: Total estimated residual waste in the south west by area up to 2028

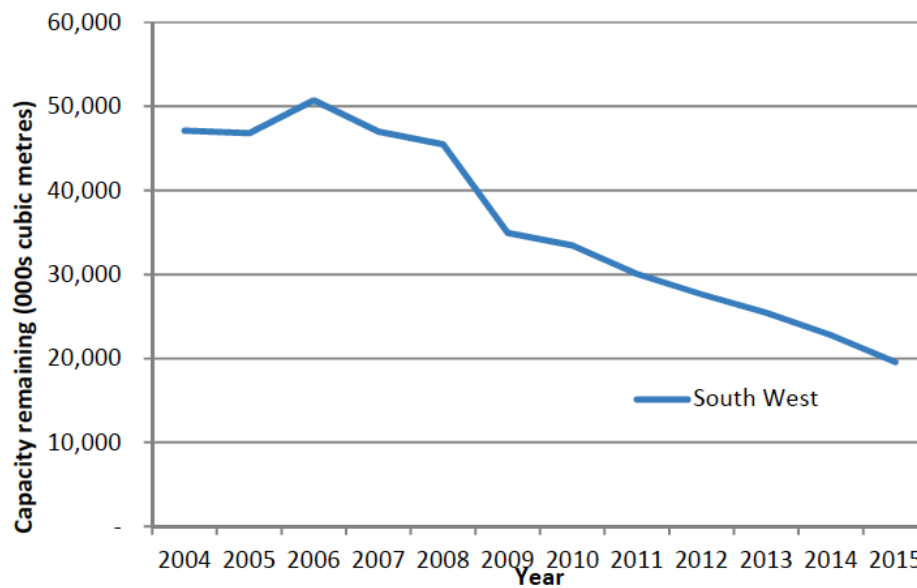


Source: ERM Summary Report (based on Appendix 1, Regional Waste Management in the South West, SWWTAB, October 2017)

- 5.36 The SWWTAB paper considered regional landfill capacity based on Environment Agency data. It found that:

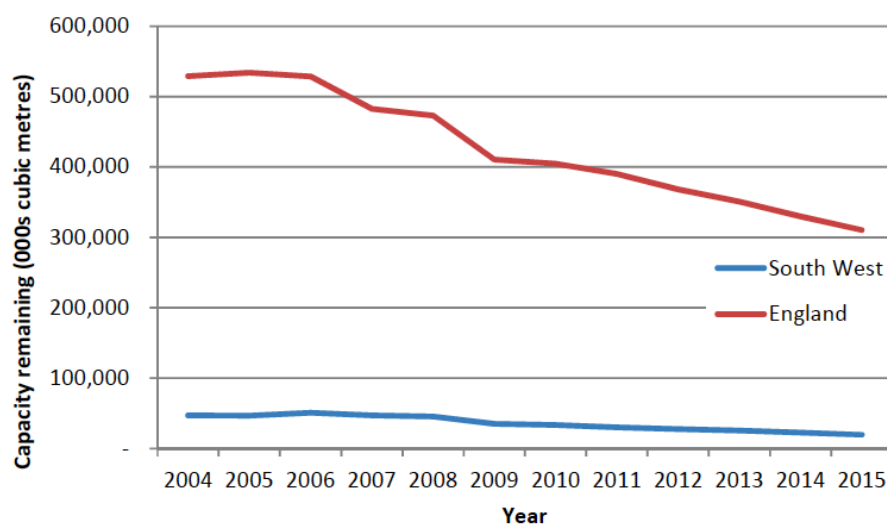
- Apart from an increase between 2005 and 2006, the available permitted capacity at non-hazardous landfill sites across the region has declined annually since 2004
- Landfill capacity peaked in 2006 at 50.7 million cubic metres, however less than half of this capacity remained in 2015 (19.6 million cubic metres).
- The regional decline in landfill capacity is comparable with the national picture of decline, particularly from 2006 onwards (see figures 5.15 and 5.16 below).

Figure 5.15: Non-hazardous landfill capacity trends on the south west



Source: Appendix 1, Regional Waste Management in the South West, SWWTAB, October 2017

Figure 4.16: Non-hazardous landfill capacity trends on the south west



Source: Appendix 1, Regional Waste Management in the South West, SWWTAB, October 2017

- Landfill capacity in the south west region in 2015 represented only 6% of the national landfill capacity, down from 10% in 2008.
  - Whilst there are a number of non-hazardous landfill sites with extant permissions, a large number of these have been permanently closed or mothballed, including two landfill sites in Dorset (Trigon and Beacon Hill) in 2017.
  - There are no operational non-hazardous landfill sites in Dorset
  - Landfill operators indicate that further sites are anticipated to close in advance of reaching their planning permission expiry date and before utilising all of the remaining permitted capacity.
- 5.37 Since publication of the SWWTAB paper in 2017 it is likely that available capacity at the remaining non-hazardous landfill sites will have diminished further. This underlines the need for further diversion of residual waste from landfill to safeguard remaining capacity.
- 5.38 The SWWTAB paper also considered regional energy recovery capacity based on Environment Agency data. It found at the time of writing that:
- There was 2.9 million tonnes of permitted energy recovery capacity across the south west area. This can be grouped into 747,300 tonnes of anaerobic digestion and 2,107,570 tonnes of thermal treatment technology (including incineration, gasification and pyrolysis)
  - Whilst a significant amount of energy recovery capacity is permitted, a large proportion of this remains unimplemented. Only 42% of permitted capacity is currently operational
  - There is 1,199,300 tonnes of operational energy capacity (comprising 534,300 tonnes of anaerobic digestion and 665,000 tonnes of thermal treatment).
  - There are only four fully operational thermal treatment facilities in the region, compared to 16 anaerobic digestion plants.
- 5.39 In considering how the pattern of residual waste management facilities will change in future the SWWTAB paper drew the following conclusions that are relevant to this need case:
- As the levels of recycling and energy recovery have grown over recent years, the amount of waste being sent to landfill has reduced
  - This reduction in landfill of residual waste is expected to continue as new energy recovery facilities become operational across the region over forthcoming years
  - With more waste expected to be diverted to energy recovery and increasing cost, the landfill of residual waste is no longer an economic waste management solution at a local scale due to reducing volumes requiring this form of treatment

- In relation to energy recovery, on a national level, there is a general consensus that the existing level of operational capacity will not be sufficient to meet the projected demand in the future
- There is currently a significant amount of permitted capacity in the south west which is yet to be delivered
- There is general consensus that it is highly unlikely that all of the permitted energy recovery capacity will be delivered. This is due to the challenges associated with securing financing for schemes and securing sufficient waste contracts to enable delivery
- There may be a requirement for further facilities in the region, potentially operating on cross boundary, sub-regional scale.

### ***Overall conclusions***

- 5.40 The DEFRA national and regional waste statistics recognise that there are significant volumes of residual arisings (both household and C&I wastes) being generated in the region.
- 5.41 Despite relatively high regional levels of recycling, a significant proportion of residual waste (around 20%) is being sent to landfill (more than England at 11%) and less is being sent to energy recovery (28%) compared to England (43%).
- 5.42 In addition to household waste, there are significant quantities of C&I wastes being generated nationally and regionally, a proportion of which after recycling could be sent to energy recovery rather than to landfill.
- 5.43 Based on figures for waste collected and managed, it is clear that whilst energy recovery is playing an important part in managing residual waste, more needs to be done to divert more of the 11 Mt (in England) and 0.5Mt (in south west region) of residual waste that is currently sent to landfill to energy recovery, instead in line with the waste hierarchy.
- 5.44 Nationally, large volumes of RDF are being exported out of the UK to Europe (2.45 Mt). The export of RDF is declining as available ERF capacity reduces across Europe and fiscal and political factors create uncertainty. Most of the RDF produced in the south west region is exported out of the country (81%). A need exists, both nationally and regionally, for new treatment capacity to enable more of the UK's RDF to be retained and managed in the UK, to provide more sustainable lower carbon energy.
- 5.45 Analysis by Tolvik estimates that between 195,000 and 310,000 tonnes of RDF is currently being exported from the UK and Eire that is passing through the English Channel and in close vicinity to Portland, which could provide suitable feedstock for the Portland ERF.
- 5.46 The SWWTAB study concludes that the volume of residual municipal and C&I wastes, generated across the south west region, and requiring treatment by landfill or energy recovery, is likely to increase significantly in future years.



- 5.47 However, the SWWTAB study also concludes that available landfill capacity has reduced significantly in recent years as sites are permanently closed or mothballed and that this trend will continue, and that more sites will close early with remaining sites performing a regional function.
- 5.48 The SWWTAB study found that whilst there is a significant volume of consented thermal treatment technology in the region, less than half had been developed and was operational, and that it was highly unlikely that all of the permitted energy recovery capacity will be delivered.
- 5.49 Given reducing landfill capacity and uncertainty as to whether consented thermal treatment capacity will come forward, the SWWTAB concluded that there may be a requirement for further facilities in the region, potentially operating on a cross boundary and sub-regional scale.
- 5.50 Overall, there is a compelling national and regional need for the provision of new energy recovery facilities to divert more residual waste away from landfill and enable more of the RDF material produced in the UK to be managed in the UK, reducing exports.

## 6.0 WASTE AVAILABILITY AND SUPPLY

### Introduction

- 6.1 The Portland ERF is being developed as a merchant plant. As such, it is not pre-contracted to manage a specific waste authority's arisings, but instead will offer a facility for waste producers, authorities and managers to use as they require. The development of a large-scale treatment facility and securing the circa. £100 m of investment required for its construction, requires sufficient confidence to be established with funders that sufficient waste exists and contracts can be secured to underpin its operation.
- 6.2 Although not being built specifically to manage household residual waste from Dorset, it is clear from the evidence presented in this document that there is a need for a residual waste treatment facility of the type proposed in Dorset to manage its waste. Dorset's collected residual waste is currently managed by means of short term contracts, although Dorset will be looking to secure long term contracts for its collected residual waste within the next few years.
- 6.3 Given that ERF projects of this type typically take two years to construct post planning, it is essential that the Portland facility be consented as quickly as possible so that it is ready to accept and manage Dorset's collected residual waste. However, like all merchant facilities it is necessary for the ERF to have flexibility to source residual both municipal and C&I wastes from other areas which will provide resilience should conditions in the waste markets change over time.

### The Portland ERF catchment area

- 6.4 The applicant 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 and bioenergy sectors. This study considered whether there is sufficient waste, that is realistically available, in the market within an appropriate catchment area.
- 6.5 The 'catchment area' is the term given to the area over which it would be reasonable to expect an ERF would be able to secure residual waste delivered by road. There are many precedent projects that have a catchment area for residual waste of within a 2-3 hour drive time (one way) for large goods vehicles of the target ERF, with appropriate consideration given to road transport links and competitor plants.
- 6.6 Tolvik determined that a 3 hour drive time was appropriate for the proposed ERF given its coastal location and position with a relatively rural county. The drive time catchment area, shown graphically in figure 6.1, was considered by Tolvik to represent the most 'natural' immediate market for the Portland ERF because:
- The road network has optimum connectivity in an east west direction
  - This covers 50% of the area of Devon, Somerset, Wiltshire and Hampshire (beyond the 3 hour drive time residual waste is more likely to go to other energy from waste facilities)

- This includes a number of large urban areas, including the Bournemouth, Christchurch and Poole conurbation, Weymouth and Portland, Exeter, Taunton, Yeovil, Salisbury, Southampton, Winchester, Eastleigh and Havant.

Figure 6.1: Catchment area based on 3 hour HGV drive time



Source: Tolvik Consulting

#### Residual waste availability in the catchment

- 6.7 The Tolvik assessment, adopting a median waste growth scenario, concludes that the amount of local authority collected residual waste in the catchment area, available to the proposed Portland ERF would be over 0.57 Mt by 2035. The assessment also predicts that by 2035 there would be around 0.3Mt of residual C&I wastes in the catchment area.
- 6.8 The market assessment identifies that there are four ‘certain’ energy from waste facilities located within the catchment. These being the Veolia plants at Marchwood and Chineham, the Viridor facility at Exeter and the Equitax/Iona facility at Bridgewater (which is under construction). These facilities are all located on the periphery of the defined Portland ERF catchment area, and are subject to significant contracts for local authority collected waste tonnages, such that they are likely to have limited merchant capacity for additional municipal or C&I wastes.
- 6.9 Taking account of existing capacity and forecast capacity, it is expected that the amount of residual waste currently available in the wider catchment would be substantial. The Portland ERF can therefore draw upon significant waste arisings from within its land based catchment.

#### Residual waste availability outside the catchment

- 6.10 As a merchant facility, located within a deep water port, the proposed ERF will also have the capability of managing residual wastes that can be delivered by ship, thus further increasing its commercial resilience and ability to secure funding for its delivery and operation.

- 6.11 There is approximately 2.4 Mt of RDF that is currently exported from the UK to Europe for treatment. This figure is beginning to fall as costs for exporting waste are increasing sharply due to increasing taxes on waste export. It is expected to continue to fall as projects such as the Portland ERF are developed to ensure that waste is managed firstly in the UK in accordance with the self-sufficiency and proximity principles.
- 6.12 Analysis by Tolvik estimates estimates that between 195,000 and 310,000 tonnes of RDF is currently being exported from the UK and Ireland that is passing through the English Channel and in close vicinity to Portland, which could provide suitable feedstock for the Portland ERF.
- 6.13 In addition to dealing with residual waste arising in Dorset and its wider catchment area delivered by road, the ERF will also have the capability to manage waste by ship derived from other locations in the UK and elsewhere, where this is economic to do so.

### Supply strategy

- 6.14 Because the Portland ERF is not pre-contracted to manage a specific waste authority's arisings, the applicant has developed a robust fuel supply strategy to ensure that the facility is economically viable, deliverable and resilient. This supply strategy will ensure that it can continue to meet Dorset's long term residual waste treatment need.
- 6.15 The applicant has therefore partnered with Geminor to develop its fuel supply strategy. Geminor is one of the leading companies in Europe specialising in the supply of waste products to recycling and energy recovery.
- 6.16 In 2018 Geminor UK had a turnover of £47m. According to official statistics in 2018 Geminor exported around 420,000 tonnes of RDF under their own name from England making them the largest exporter; in fact the actual figure for material exported is higher as this excludes those tonnages exported under their client's name. Geminor report that total exports in 2018 were 597,000 tonnes from the UK and Ireland as a whole.
- 6.17 Despite still being at the planning stage, the applicant (via its partnership with Geminor) has already secured access to approximately 60,000 tonnes per annum of Dorset Waste Partnership (DWP) residual waste. This is a waste contract that has recently been re-tendered. Most importantly, this is waste that currently is exported out of the county (and the country) and which would in future be treated within Dorset.
- 6.18 DEFRA statistics for 2018/19 show that the Dorset Waste Partnership, along with Bournemouth and Poole Councils collected 380,415 tonnes of waste. Of this 109,984 tonnes was exported out of Dorset for incineration with energy recovery and 51,344 tonnes was landfilled. Contracts for this waste will be re-tendered over the coming years and, as the only energy recovery treatment facility in the county, the Portland ERF would be in a strong position to attract this waste.
- 6.19 Through its fuel supply strategy, the Portland ERF would have a guaranteed option to manage 15,000 tonnes per annum of residual waste derived from the

States of Guernsey, which would come via ferry to Poole and then be transported by road to Portland.

- 6.20 The Portland ERF could also attract around 10,000 tonnes per annum of residual waste from neighbouring energy from waste facilities, while they undertake planned downtime for maintenance and potentially significant amounts of overspill residual waste (40,000 tpa) arising from other neighbouring authorities within its catchment area.
- 6.21 In addition to the local authority collected household waste arising in Dorset, there is also a significant amount of residual commercial and industrial (C&I) waste arising in Dorset, which is currently exported out of the county/country for treatment or disposal. A report in 2017 from BPP Consulting stated that 447,000 tonnes of C&I wastes were generated in Dorset in 2015/16 and that a significant proportion of this (80,329 tonnes) was estimated to have been sent to landfill in Dorset with a further 12,229 tonnes went to landfill outside of the county. In 2020 Dorset currently has no landfill capacity.
- 6.22 The application site's location at Portland Port provides opportunities to deliver waste by sea, as well as taking away ash by sea. There are clear benefits of this approach by taking lorries off the road, reducing the UK's reliance on exporting its residual waste abroad for treatment, as well as supporting economic regeneration of Portland port and Portland.
- 6.23 For planning and environmental impact assessment purposes the applicant has projected impacts based on both 100% transport by road as well as 100% transport by sea to capture all potential outcomes. In reality, the applicant believes that the split is likely to be around 75% by road and 25% (around 50,000 tonnes) by sea. This would equate to around 20 ships a year and these ships would most likely be traveling from Northern Ireland, Republic of Ireland, and other UK ports.

### **Conclusion**

- 6.24 The above demonstrates that there are significant volumes of local authority collected and C&I residual wastes arising within Dorset and its wider catchment area, that the merchant ERF would be well placed to access by road. Whilst the Portland ERF is still at the planning stage, the applicant has partnered with Geminor UK to develop its RDF fuel supply strategy, and this has already secured access to 60,000 tonnes of Dorset's residual waste, with future potential to access more.
- 6.25 Large volumes of RDF are already passing by Portland, via the English Channel, as exports from the UK and Ireland to the European mainland, some of which could be diverted to the Portland ERF.
- 6.26 The Portland ERF will therefore have access to more than enough RDF material, adopting an expected 75/25 split between road and sea, to ensure that the nominal capacity of 183,000 tonnes is fully utilised. The applicant's partnership with Geminor UK provides further confidence that the facility will have market access to sufficient RDF.

## 7.0 CONCLUSIONS

7.1 The applicant has undertaken analysis of available waste data and other relevant evidence at the national, regional and local Dorset level. This need statement presents evidence to demonstrate the need case for the proposed Portland ERF.

7.2 This evidence supports the following conclusions:

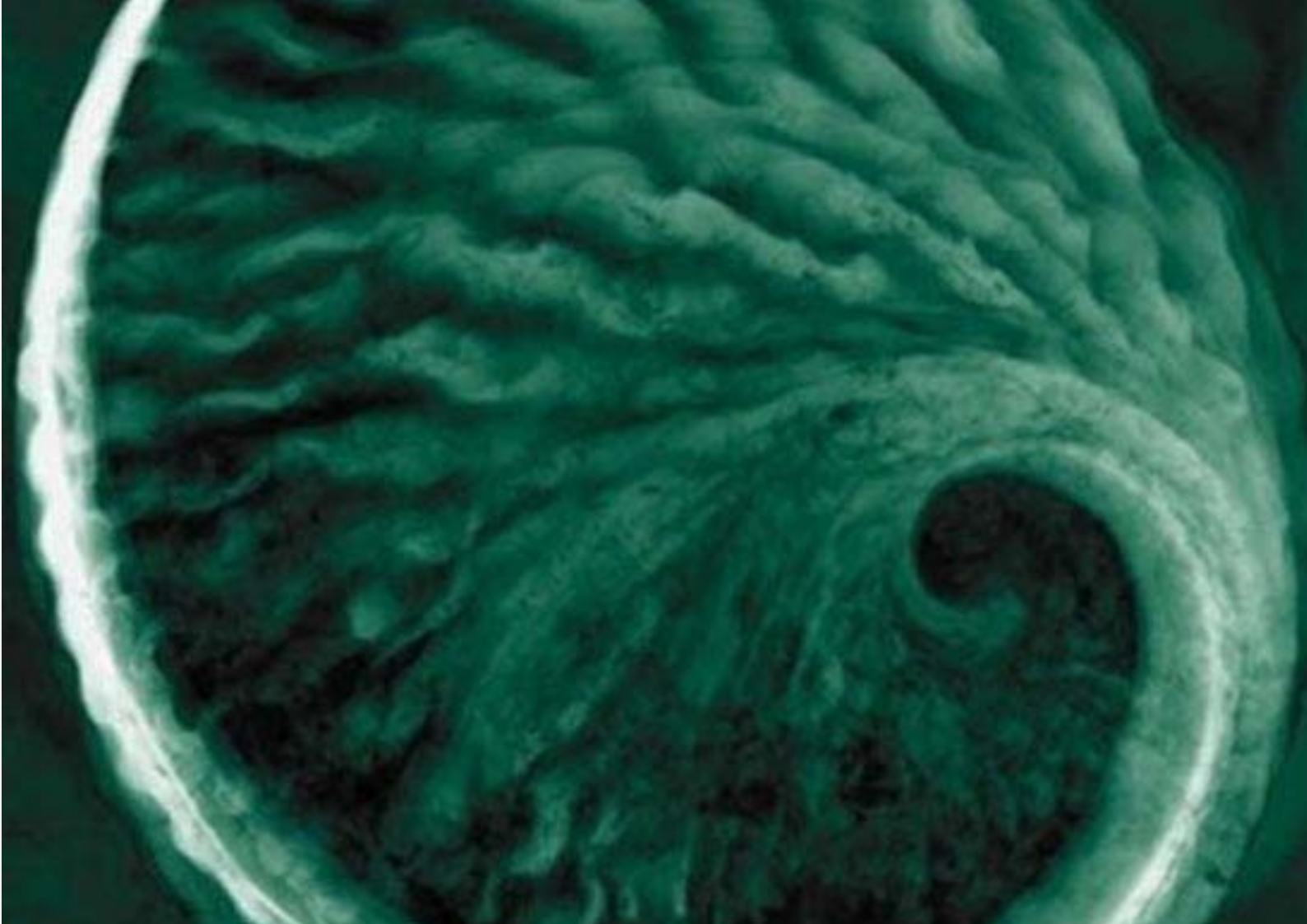
- There are large volumes of residual waste generated in Dorset, regionally and nationally, that is still disposed of to landfill, a significant proportion of which could instead be diverted away to energy recovery facilities in line with the waste hierarchy.
- There are also large volumes of residual C&I waste generated in Dorset, regionally and nationally, a significant proportion of which is not recovered and is instead landfilled, which could instead be diverted further up the waste hierarchy and managed via energy recovery facilities
- Whilst Dorset has a relatively good record of recycling and re-use, currently around 46% of collected waste is residual and requires treatment. However, Dorset has no remaining landfill capacity and no energy recovery facilities to manage existing and future waste. As a consequence, almost all of Dorset's residual waste is either managed by intermediate MBT to create RDF which is exported to Europe or directly exported to other energy from waste facilities or landfill outside of Dorset. This is not sustainable and runs contrary to the self-sufficiency and proximity principles and could be addressed by provision of an ERF in Dorset.
- Successive Dorset Waste Plans and waste policy, have failed to secure any substantial new waste management infrastructure in Dorset (other than one MBT facility) with proposals for advanced thermal treatment facilities failing technically and commercially. This has resulted in an over reliance on the export of waste out of county contrary to sustainable waste management policies and providing little security or control as to how and where Dorset's residual waste will be managed.
- Four sites are identified in the Dorset Waste Plan for new residual waste treatment capacity, with a combined assessed capacity of 385,000 tonnes to provide flexibility for non-delivery. However, all of these sites are subject to significant planning and environmental constraints. As such, they are either unlikely to come forward at all and deliver any capacity, or could only accommodate small scale facilities that are less likely to be viable and deliverable. A need exists for a large-scale ERF facility as proposed, which is viable, proven and deliverable.
- Dorset has a predicted shortfall in residual waste treatment capacity of 234,000 tonnes by 2033. Action is urgently required to ensure that suitable capacity is provided in Dorset to meet both existing and predicted future need and reduce the need for more export. An ERF at Portland would be capable of helping to meet these needs.

- Whilst residual waste arisings in the south west region are predicted to increase over coming years, landfill capacity is continuing to decline with the early closure of sites. Coupled with the fact that not all consented regional energy recovery capacity is expected to be delivered, this means that more energy recovery capacity is likely to be required and that this will operate on a cross boundary, sub-regional scale.
- Large volumes of RDF, derived in the UK and regionally in the south west, are currently being exported to Europe for energy recovery, due to a lack of available capacity here, which should instead be treated at energy recovery facilities in the UK, in line with the self-sufficiency and proximity principles
- Specialist waste market analysis has determined that there are significant volumes of residual waste (municipal and C&I) available within a defined 3 hour drive time catchment of the ERF site at Portland that could reasonably be available to a merchant facility.
- Whilst there is more than sufficient waste available within Dorset and from the wider catchment, by road, there are also substantial volumes of RDF (between 195,000 and 310,000 tonnes) currently being exported from the UK and Ireland to Europe by sea that is passing through the English Channel that could be diverted to Portland, because of the site's port location. There is a need for RDF material arising in the UK to be managed at energy recovery facilities located in the UK as this in line with the self-sufficiency and proximity principles.
- Because the Portland ERF is not pre-contracted to manage a specific waste authority's arisings, the applicant has developed a robust fuel supply strategy to ensure that the facility is economically viable, deliverable and resilient. This supply strategy will ensure that it can continue to meet Dorset's long term residual waste treatment need.
- The applicant has entered into a partnership with Geminor, one of the leading companies in Europe specialising in the supply of waste products to recycling and energy recovery. Through this partnership the ERF already has access to RDF waste produced at the Canford MBT facility and can therefore meet an existing need for residual waste treatment. The facility is also well placed to secure future residual waste contracts for Dorset and other waste authorities, which could be transported to Portland by road and sea, meeting both existing and future need.

7.3 These factors, both individually and cumulatively, demonstrate that there is a compelling need case for the proposed Portland ERF and that there is a quantitative and market need for a new waste management facility of this type in Dorset.

## **Appendix 1: ERM Waste Statistics Analysis: Summary Report**





# Waste Statistics Analysis

Summary Report

19 August 2020

Project No.: 0552187

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## Signature Page

19 August 2020

# Waste Statistics Analysis

## Summary Report

A black rectangular redaction box covers the signature area. Above the box, there are faint, handwritten blue scribbles.

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Simon Aumônier

Partner

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No table of figures entries found.

#### Acronyms and Abbreviations

Name	Description
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## 1. INTRODUCTION

### 1.1 Purpose of this Statement

Powerfuel Portland Limited (PPL) is proposing to develop a new energy recovery facility (ERF) on land at Portland Port, Portland. The ERF will be fuelled by refuse derived fuel (RDF), this being residual waste where all practicably recyclable materials have been removed through source-separation and pre-treatment. The ERF will have a treatment capacity of 190,000 tonnes per annum (tpa).

### 1.2 Data sources

The data included in this statement are drawn from prior work carried out by the Portland project team, as well as primary research undertaken by ERM, and include reference to the following data sources:

- Local, County/Unitary level Waste Plans and their supporting evidence base (current adopted version and where available, previous plans or their equivalent);
- Environment Agency (EA) Waste Data Interrogator (WDI) for waste generated and waste managed from Dorset, the SW region and the whole of England; and
- National statistics published by the Department for Environment, Food and Rural Affairs (DEFRA) for municipal solid waste (MSW) and commercial and industrial (C&I) waste, including where such data have a county-level split.

ERM also sought information relating to the Dorset Private Finance Initiative (PFI) process history and outcome. However, no relevant information was found online, including on the Dorset Council, Bournemouth, Christchurch and Poole Council and government websites.

#### 1.2.1 DEFRA

##### 1.2.1.1 UK statistics on waste, March 2020

This release<sup>1</sup> contains statistics on waste produced at a UK level. The topics covered in this publication are:

- Waste from Households – 2010-18, UK and country breakdown;
- BMW (Biodegradable Municipal Waste) to landfill – 2010-18, UK and country breakdown;
- WStatR (Waste Statistics Regulation) generation breakdown – 2010-16, UK and England breakdown, but not Devolved Administrations (DAs);
- WStatR treatment breakdown – 2010-16, UK and England breakdown, but not DAs;
- WStatR infrastructure breakdown - 2012-16, UK and England breakdown, but not DAs;
- C&I (Commercial and Industrial) waste generation – UK 2010-16, England 2010-18, UK and England breakdown, but not DAs;
- C&D (Construction and Demolition) recovery – 2010-16, UK and England breakdown, but not DAs; and
- Packaging waste recycling and recovery – 2017, UK only.

The datasets associated with this report are publically available.<sup>2</sup>

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<sup>1</sup> <https://bit.ly/3d9iKHa>

<sup>2</sup> <https://bit.ly/2z9bNH0>

### 1.2.1.2 Statistics on waste managed by local authorities in England in 2018/19

The statistics on waste managed by local authorities in England are published by DEFRA, with the latest report dated 28<sup>th</sup> November 2019<sup>3</sup>. This release relates to the collection and management of waste under the possession or control of local authorities in England. It covers three principal measures:

- 'Waste from households' - is the measure introduced by the UK in 2014 to provide a harmonised UK indicator for reporting recycling rates at a UK level on a calendar year basis, complying with the Waste Framework Directive (2008/98/EC). It excludes local authority collected waste not considered to have come directly from households, such as street bins, street sweepings, parks and grounds waste, and compost-like output.
- Local authority collected waste (LACW) - this is all waste within the remit of local authorities, including household waste and other non-household waste collected by local authorities; and
- Household waste - this is broader than 'waste from households', and includes waste from street bins, street sweepings, and parks and grounds, but does not include metals recovered from incinerator bottom ash.

### 1.2.1.3 Local authority collected waste: annual results tables (ENV18)

This data set (ENV18)<sup>4</sup> presents final annual results for LACW and management figures for England. The data are sourced from DEFRA's WasteDataFlow tool and were last updated in November 2019. The full dataset is published in eight tables. However, for this analysis, some tables were excluded as they are not relevant for this piece of work.

- Table 1a: Regional breakdown - LACW generation from 2000-01 to 2018-19 – the data from Table 1 have been manipulated using pivot tables to give regional breakdowns relevant for this analysis.
- Table 2a: Regional breakdown - Management of LACW, 2018-19 – the data from Table 2 have been manipulated using pivot tables to give regional breakdowns relevant for this analysis.
- Table 3a: Selected waste indicators 2010-2011 – 2018-2019 – presents data not relevant for this analysis.
- Table 4: Notable Authorities – presents data not relevant for this analysis.

ERM has extracted the relevant data and presented these in separate documents. A description of these documents is provided in Section 2 and links to these documents can be found in Appendix A.

## 1.2.2 EA Waste Data Interrogator 2018

The Waste Data Interrogator (WDI) 2018 is a waste statistics dataset published by the Environment Agency<sup>5</sup>. All operators of regulated waste management facilities in England are required to provide the EA with details of the quantities and types of waste they deal with, i.e. waste received at a site and waste sent on from the site to other facilities or processes. These data are used to monitor compliance, but have also been used historically by the European Commission (EC), DEFRA and local authorities to assist in planning for new waste facilities and for monitoring against statutory targets.

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<sup>3</sup><https://bit.ly/3e7mAkY>

<sup>4</sup> <https://bit.ly/2z3U8RI>

<sup>5</sup> <https://bit.ly/3c09ISo>

- For the Local, Regional, and National contexts, the relevant information was extracted from the interrogator to provide waste data categorised as Household, Industrial & Commercial (HIC). Inert and Hazardous waste categories were excluded, as they are not included in the expected feedstock for the Proposed Project.
- For the Local and Regional contexts, the data are presented according to Waste Planning Authority (WPA).
- For the Refuse Derived Fuel (RDF) extracts, waste data categorised under European Waste Catalogue (EWC) code '19 12 10 combustible waste (reuse derived fuel)' were extracted from the interrogator.
- Within the WDI, the management type can be categorised as 'Fate', 'Site Category' or 'Facility type', whilst for the sake of this analysis, 'Fate' has been used.

ERM has extracted these data and analysed them in standalone documents. Descriptions and links to these documents can be found in Appendix A.

### 1.2.3 Dorset County Council

The Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019<sup>6</sup> was adopted by Dorset Council and BCP Council (the minerals and waste planning authorities) on 31 December 2019. The Plan is the blueprint for how and where we manage the waste we produce over the next 15 years. As part of the Waste Plan development, background evidence papers are produced. These were also reviewed for relevant statistics, including:

- Bournemouth, Dorset and Poole Waste Plan, Background Paper 1: Waste Arisings and Projections, November 2017;<sup>7</sup> and
- Bournemouth, Dorset and Poole Waste Plan, Background Paper 3: Cross Boundary Movements of Waste, November 2017.<sup>8</sup>

### 1.2.4 South West Waste Technical Advisory Board Authorities (2017)

The South West Waste Technical Advisory Board (SWWTAB) comprises waste planning officers from across the area, in addition to representatives from the Environment Agency. The aims of the SWWTAB as set out in the groups terms of reference are:

- To help waste planning authorities (WPAs) in the South West area to fulfil the Duty to Cooperate on strategic issues; and
- To enable WPAs in the South West area to carry out their individual responsibilities more effectively.

In October 2017, the SWWTAB published a report on Residual Waste Management in the South West<sup>9</sup>. The purpose of the report is to consider how residual waste management across the South West is likely to evolve over forthcoming years and the implications this will have for policy makers. In order to provide some context for residual waste capacity, consideration has been given to the projected amount of residual waste (requiring energy recovery or landfill) that will be generated in the region in the future. This has been informed by projections produced by individual WPAs.

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<sup>6</sup> <https://bit.ly/2yVVz4U>

<sup>7</sup> <https://bit.ly/2VYqPZI>

<sup>8</sup> <https://bit.ly/3flhAu7>

<sup>9</sup> <https://bit.ly/2ArmZzV>

### 1.2.5 Footprint Services RDF Export Dashboard

Footprint Services produces a range of reports relating to waste and recycling, including RDF insight specific reports. It produces a RDF Export dashboard that provides a summary report, published on a monthly basis<sup>10</sup>. For the sake of this analysis, statistics from the February 2020 and March 2020 reports have been presented.

## 1.3 Assumptions and Limitations

The WDI only presents data for waste that was managed by facilities in England. It does not include direct inputs into incinerators, direct exports or sites that have exemptions from waste permits. Transfer sites, and to a lesser extent treatment sites, will generally receive and manage wastes before they, or their residues, are dispatched to landfill, incinerator and recovery sites. Outputs from permitted sites are recorded by destination, such as landfill, incineration, recovery, transfer and treatment. However, outputs that are recorded as subject to transfer may also be double-counted with the site where they are ultimately disposed, e.g. landfill or incineration. Wastes are categorised under the European Waste Catalogue (EWC).

All figures are reproduced in this report as originally published and may be subject to rounding errors

Within DEFRA dataset ENV18, total LACW managed may not match the total LACW, due to stockpiling of waste between reporting periods. Total collected waste is based on reported LACW. Total managed waste is based on LACW that is disposed or sent for recycling-composting. A total for England cannot be obtained by summing data from all local authorities - data for waste collection authorities has been excluded to avoid double counting. Furthermore, the dataset does not include details of management destinations for the LACW.

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<sup>10</sup> <https://www.footprintservices.co/communities/7/004/013/621/507/files/4637116277.pdf>

## 2. WASTE STATISTICS

### 2.1 UK and England Context

#### 2.1.1 UK Statistics on Waste – March 2020

- The UK generated 221.0 million tonnes (Mt) of total waste in 2016, with England responsible for 85% of the UK total.
- Total waste from households (WfH) in 2018 was 26.4 Mt, with England responsible for 22.0 Mt of this waste (83%).
- The UK recycling rate was 45% in 2018.
- The amount of municipal waste sent to landfill in the UK was c.14.64 Mt, of which around 7.2 Mt was biodegradable municipal waste (BMW).
- Of the 14.6Mt of municipal waste landfilled in 2018 in the UK, around 8.7 Mt was derived from mechanical treatment of wastes, around 4.4 Mt was derived from mixed-municipal wastes and the remainder (around 1.5Mt) was derived from other wastes.
- The majority of municipal waste landfilled in 2018 came from England (around 11.7Mt), with about 7.7 Mt of that derived from the mechanical treatment of waste, some 2.8 Mt derived from mixed-municipal wastes and the remainder (around 1.1Mt) derived from other wastes.
- The proportions of those municipal waste categories landfilled have more or less reversed since 2010. 'Wastes from mechanical treatment of waste' have increased each year (from 38% in 2010 to 60% in 2018) and 'mixed municipal waste' has decreased each year (from 54% in 2010 to 30% in 2018).
- The latest estimate for C&I waste generation in England was c.37.2 Mt in 2018.

#### 2.1.2 Statistics on waste managed by local authorities in England in 2018/19

- In 2018, the total 'waste from households' figure was 22.0 Mt.
- The amount of residual waste treated in 2018/19 was 12.2 Mt.
- The rolling 12-month 'waste from households' recycling rate was 45.1% at the end of March 2019.
- In 2018/19, total local authority managed waste remained steady at 25.6 Mt.
- 10.8% (2.8 Mt) of all LACW was disposed to landfill and, of this amount, 2.1 Mt (76.2%) was sent directly to landfill.
- The amount of waste sent for incineration increased by 0.4 Mt (3.4%) to 11.2 Mt in 2018/19. This management route dealt with 43.8 % of all local authority waste.

#### 2.1.3 Local authority collected waste: annual results tables (ENV18)

Data set ENV18 presents final annual results for LACW and management. Data extracted were for the 2018/19 financial year, as follows.

- Total waste collected by local authorities was 25.4 Mt (excluding rejects<sup>11</sup>); of which:

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<sup>11</sup> Materials that were collected for recycling or composting but rejected as not suitable for recycling, either at collection, during sorting at a Materials Recovery Facility (MRF) or at the re-processor's gate.



- 23.0 Mt was household waste; and
- 2.4 Mt was non-household waste.
- The regional divide was as follows:
  - 16% was collected from the South East;
  - 14% was collected from London;
  - 14% was collected from the North West;
  - 11% was collected from the East of England;
  - 11% was collected from the West Midlands;
  - 10% was collected from the South West (2.6 Mt);
  - 10% was collected from the Yorkshire and Humber;
  - 9% was collected from the East Midlands; and
  - 5% was collected from the North East.
- Of the total, 14.5 Mt was not sent to recycling/composting/reuse, 10.9 Mt was sent for recycling and 0.5 Mt was rejects:
  - For household waste, 55% was not sent for recycling (13.0 Mt), 43% was sent for recycling, composting or reuse (10.0 Mt), and the remainder is the estimated proportion of rejections; and
  - For non-household waste, 62% was not sent for recycling (1.5 Mt), and 38% was sent for recycling, composting or reuse (0.9 Mt).
- The total quantity of collected waste managed in England was 25,585,803 tonnes (t), of which:
  - 43% was recycled/composted, i.e. 10,925,567 t;
  - 43% was incinerated with energy recovery, i.e. 11,031,097 t;
  - 11% was landfilled, i.e. 2,756,484 t
  - 1% was incinerated without energy recovery, i.e. 173,581 t; and
  - The remainder was 'other'.

A portion of this data is presented in Sankey diagrams in Appendix B.

### 2.1.4 EA Waste Data Interrogator 2018

The 2018 EA Waste Interrogator data extracted for waste received by facilities in England categorised as Household, Industrial & Commercial (HIC) are as follows.

- The WDI data for waste managed in England total 198.7 Mt in 2018.
- The total generated in England was 196.4 Mt:
  - East Midlands – 17.6 Mt (9.0%);
  - East of England – 24.3 Mt (12.4%);
  - London – 23.5 Mt (12.0%);
  - North East – 9.4 Mt (4.8%);
  - North West – 32.1 Mt (16.3%);
  - South East – 33.2 Mt (16.9%);
  - South West – 18.5 Mt (9.4%);

- West Midlands – 17.6 Mt (9%); and
- Yorkshire & Humber – 22.1 Mt (10.2%).
- The total generated in Wales was 1.2 Mt, in Scotland 547,000 t and in Northern Ireland 68,000 t.
- Waste that originated outside of the UK was a total of 425,000 t and the remainder was not codeable.
- Waste is categorised using the European Waste Catalogue (EWC):
  - Total municipal waste (EWC chapter 20) was 51.1 Mt;
  - Total construction and demolition wastes (EWC chapter 17) was 81.4 Mt; and
  - Total waste and water treatment wastes (EWC chapter 19) was 48.4 Mt.
- The amount of waste that was sent to recovery facilities was 98.8 Mt, 42.4 Mt was sent to transfer stations, 41.1 Mt was sent to landfill, 17.6 Mt was sent to treatment facilities, 3.4 Mt was sent to incinerators with energy recovery, 0.4 Mt was sent to incinerators without energy recovery, 0.03 Mt was sent to long-term storage and the remainder was either not reported or classified as 'Other Fate'.
  - For municipal waste (EWC chapter 20), 23.7 Mt was sent to recovery facilities, 18.2 Mt was sent to transfer stations, 4.5 Mt was sent to landfill, 2.4 Mt was sent to treatment facilities, 1.7 Mt was sent to incinerators with energy recovery, 0.3 Mt was sent to incinerators without energy recovery and the remainder was either not reported or classified as 'Other Fate'.
  - For construction and demolition wastes (EWC chapter 17), 43.6 Mt was sent to recovery facilities, 10.3 Mt was sent to transfer stations, 24.6 Mt was sent to landfill, 1.4 Mt was sent to treatment facilities, 0.8 Mt was sent to incinerators with energy recovery, 0.07 Mt was sent to incinerators without energy recovery, 7,000 t was sent to long term storage and the remaining was either not reported or classified as 'Other Fate'.
  - For waste and water treatment wastes (EWC chapter 19), 20.4 Mt was sent to recovery facilities, 12.1 Mt was sent to treatment facilities, 10.3 Mt was sent to landfill, 4.8 Mt was sent to transfer stations, 0.5 Mt was sent to incinerators with energy recovery, 0.02 Mt was sent to long term storage, 900 t was sent to incinerators without energy recovery and the remainder was either not reported or classified as 'Other Fate'.
- The regional breakdown for the destination region of waste managed in England was as follows:
  - East Midlands – 17.4 Mt (8.7%);
  - East of England – 29.3 Mt (14.8%);
  - London – 17.8 Mt (8.9%);
  - North East – 10.8 Mt (5.4%);
  - North West – 31.7 Mt (15.9%);
  - South East – 32.3 Mt (16.3%);
  - South West – 18.8 Mt (9.5%);
  - West Midlands – 18.1 Mt (9.1%); and
  - Yorkshire & Humber – 22.5 Mt (11.3%).

## 2.2 South West Region Context

### 2.2.1 Statistics on waste managed by local authorities in South West in 2018/19

- The South West region landfilled 499,000 t of LACW (19.3%), compared to 2,756,000 t in England (10.8%).
- The South West region incinerated with energy recovery 735,000 t of LACW (28.3%), compared to 11,031,000 t in England (43.1%).
- The South West region recycled/composted 1,295,000 t of LACW (49.9%), compared to 10,926,000 t in England (42.7%).
- The regional household recycling rate for the South West was 50.1%, compared to 43.5% for England as a whole, with London having the lowest rate, at 33.4%
- The landfill rate for LACW in the South West was 19.3%, compared to 10.8% for England as a whole, with Yorkshire & Humber having the lowest rate, at 5.6%.

### 2.2.2 Local authority collected waste: annual results tables (ENV18)

Data set ENV18 presents final annual results for LACW and management figures. Data extracted were for the 2018/19 financial year and for the South West region. More detail has been provided for Devon County Council, Somerset Waste partnership and Wiltshire, as they are the principal local authorities within a 3-hour HGV drive time radius to the proposed project.

- Wastes collected in the South West region totalled 2,587,415 t; and of this 2,414,726 t was household waste; and 172,686 t was non-household waste. Of this:
  - Devon County Council collected 372,804 t: of which 355,195 t was household; and 17,609 was non-household waste;
  - The Somerset Waste Partnership collected 258,882 t: of which 252,991 was household; and 5,890 t was non household waste; and
  - Wiltshire collected 230,101 t: of which 213,220 t was household; and 16,881 was non household waste
- Of the total collected, 1,292,594 t was sent to recycling, composting or reuse, 1,294,819 t was not sent for recycling and 37,910 t was the estimated rejects.
  - For Devon County Council, 204,124 was sent for recycling/composting/reuse, 168,679 t was not sent for recycling and 6,479 t was the estimated rejects.
  - For the Somerset Waste Partnership 133,736 was sent for recycling/composting/reuse, 125,146 t was not sent for recycling and 45 t was the estimated rejects.
  - For Wiltshire, 105,831 was sent for recycling/composting/reuse, 124,270 t was not sent for recycling and 4,323 t was the estimated rejects.
- The total quantity of South West collected waste managed was 2,593,313 t. The management destination of this waste is unknown.
  - 43% was recycled/composted, i.e. 1,294.819 t;
  - 29% was incinerated with energy recovery, i.e. 735,003 t;
  - 11% was landfilled, i.e. 499,277 t;
  - 1% was incinerated without energy recovery, i.e. 1,696 t; and

- The remainder (62,517 t) was classified as 'other'.
- Of those wastes collected by Devon County Council, 53,114 t was landfilled; of those collected by the Somerset Waste Partnership, 120,115 t was landfilled and of those collected by Wiltshire, 36,569 t was landfilled.

A portion of this data is presented in Sankey diagrams in Appendix B.

### 2.2.3 EA Waste Data Interrogator 2018

The 2018 EA Waste Interrogator data provided information on the total wastes managed with an origin in the South West region, categorised as Household, Industrial & Commercial (HIC), as follows.

- The South West Region generated 18.5 Mt of total waste in 2018.
  - Waste originating in Dorset was 1.8 Mt; in Bournemouth UA c. 227,000 t and in Poole UA c, 374,000 t.
- The breakdown of waste originating in the South West region by type was as follows:
  - Total municipal waste (EWC chapter 20) was 5.1 Mt;
  - Total construction and demolition wastes (EWC chapter 17) was 7.7 Mt; and
  - Total waste and water treatment wastes (EWC chapter 19) was 3.7 Mt.
- The amount of waste that was sent to recovery facilities was 10.1 Mt, 3.5 Mt was sent to transfer stations, 3.5 Mt was sent to landfill, 0.9 Mt was sent to treatment facilities, 0.2 Mt was sent to incinerators with energy recovery, 0.06 Mt was sent to incinerators without energy recovery and the remainder was either not reported or classified as 'Other Fate'.
  - For municipal waste (EWC chapter 20), 2.7 Mt was sent to recovery facilities, 1.6 Mt was sent to transfer stations, 0.7 Mt was sent to landfill, 0.06 Mt was sent to treatment facilities, 0.04 Mt was sent to incinerators with energy recovery, 0.05 Mt was sent to incinerators without energy recovery and the remainder was either not reported or classified as 'Other Fate'.
  - For construction and demolition wastes (EWC chapter 17), 4.2 Mt was sent to recovery facilities, 1.1 Mt was sent to transfer stations, 2.2 Mt was sent to landfill, 9,000 t was sent to treatment facilities, 0.1 Mt was sent to incinerators with energy recovery, 4,000 t was sent to incinerators without energy recovery, and the remainder was either not reported or classified as 'Other Fate'.
  - For waste and water treatment wastes (EWC chapter 19), 1.9 Mt was sent to recovery facilities, 0.7 Mt was sent to treatment facilities, 0.6 Mt was sent to landfill, 0.4 Mt was sent to transfer stations, 9,000 t was sent to incinerators with energy recovery, 900 t was sent to incinerators without energy recovery and the remainder was either not reported or classified as 'Other Fate'.
- Overall, the South West region managed 18.8 Mt of the total produced in England. Of that, 17.2 Mt originated within the region, but 473,000 originated in the South East region, 347,000 in the West Midlands region and 189,000 in Yorkshire and Humber region.
- Of the waste originating in the South West that was managed within the region, 4.1 Mt was managed in Devon, 3.6 Mt in Bath, Bristol and South Gloucestershire, 2.5 Mt in Wiltshire, 2.3 Mt in Gloucestershire, 2.0 Mt in Dorset, 1.5 Mt in Somerset and 1.2 Mt in Cornwall.
  - The main waste types managed were construction and demolition wastes (EWC chapter 17) 7.3 Mt, municipal waste (EWC chapter 20) 4.9 Mt and waste and water treatment wastes (EWC chapter 19) 3.3 Mt.

- The amount of waste managed in the South West sent to recovery facilities was 9.5 Mt, of which 3.2 Mt was sent to transfer stations, 3.3 Mt was sent to landfill, 0.8 Mt was sent to treatment facilities, 0.2Mt was sent to incinerators with energy recovery, 0.06 Mt was sent to incinerators without energy recovery and remainder was either not reported or classified as 'Other Fate'.

#### **2.2.4 South West Waste Technical Advisory Board Authorities (2017)**

In order to provide some context for residual waste capacity, consideration has been given to the projected amount of residual waste (requiring energy recovery or landfill) that will be generated in the region in the future. This forecast has been informed by projections produced by the individual WPAs and is illustrated in Table 2.1 – all figures are presented in tonnes.

**Table 2.1 South West Residual Waste Projections (tonnes)**

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
<i>Cornwall</i>	289,064	310,080	310,181	310,238	310,306	311,358	313,731	317,135	320,575	324,021	328,475	331,353	335,221
<i>Devon</i>	395,420	391,805	391,972	391,135	411,624	437,007	440,062	443,969	445,463	446,438	448,399	452,980	453,791
<i>Plymouth*</i>	77,000	77,900	78,800	79,700	80,600	81,500	82,300	83,100	83,900	84,700	85,500	86,300	87,100
<i>Torbay*</i>	40,531	40,936	41,346	41,760	42,177	42,599	43,025	43,455	43,890	44,329	44,772	45,220	45,668
<i>Somerset*</i>	123,648	90,145	86,923	83,646	77,701	77,572	77,503	77,331	77,304	77,277	77,248	77,218	77,186
<i>Dorset, Bournemouth &amp; Poole</i>	288,235	292,324	296,592	300,770	316,752	320,039	323,507	327,001	330,403	333,630	336,873	340,131	343,405
<i>Gloucestershire*</i>	146,167	146,747	146,708	145,674	142,775	143,847	144,917	145,987	147,055	148,124	149,193	150,259	151,326
<i>Wiltshire*</i>	42,275	44,521	46,811	49,148	51,531	54,159	56,921	59,824	62,875	66,082	69,452	72,994	76,717
<i>West of England</i>	832,500	852,500	866,500	870,000	880,000	812,500	837,500	832,500	846,000	864,500	865,000	877,500	880,000
<b>South West Total</b>	<b>2,234,840</b>	<b>2,246,958</b>	<b>2,265,833</b>	<b>2,272,071</b>	<b>2,313,466</b>	<b>2,280,581</b>	<b>2,319,466</b>	<b>2,330,302</b>	<b>2,357,465</b>	<b>2,389,101</b>	<b>2,404,912</b>	<b>2,433,955</b>	<b>2,450,414</b>

\*Only municipal / LACW data available.

## 2.3 Dorset Context

### 2.3.1 Local authority collected waste: annual results tables (ENV18)

Data set ENV18 presents final annual data for LACW and management routes. Data extracted for the 2018/19 financial year for the Dorset County, encompassing Dorset Waste Partnership, Bournemouth Borough Council and Poole Borough Council, is as follows:

- The total waste collected by Dorset local authorities was 377,891 t: of which 339,595 t was household waste; and 38,295 was non-household waste.
  - 8% was collected by the Dorset Waste Partnership, 214,374 t; of which 196,709 t was household waste.
  - 3% was collected by Bournemouth Borough Council, 85,186 t; of which 76,376 t was household waste.
  - 3% was collected by Poole Borough Council, 78,331 tonnes, of which 66,510 t was household waste.
- Of the total collected, 54% (203,972) was sent for recycling, composting or reuse, 46% (173,919) was not sent to recycling and these was 17,217 t of estimated rejects.
  - For the Dorset Waste Partnership, 123,278 t was sent for recycling, composting or reuse (58%) and 91,096 t was not sent for recycling (42%).
  - For Bournemouth Borough Council, 42,039 t was sent for recycling, composting or reuse (49%) and 43,147 t was not sent for recycling (51%).
  - For Poole Borough Council, 38,655 t was sent for recycling, composting or reuse (49%) and 39,676 t was not sent for recycling (51%).
- The total quantity of waste managed, which was collected in Dorset, was 380,415 t; of which 203,972 t was recycled/composted, 109,984 t was incinerated with energy recovery, and 51,344 t was landfilled. The management destination of this waste is unknown.
  - The total waste collected by the Dorset Waste Partnership managed in the county was 216,898 t; of which 123,278 t was recycling/composted, 57,445 t was incinerated with energy recovery, 30,333 t was landfilled, and the remainder was 'other'.
  - The total waste collected by Bournemouth Borough Council that was managed in the county was 85,186 t; of which 42,039 t was recycling/composted, 29,612 t was incinerated with energy recovery, 7,641 t was landfilled and the remainder was 'other'.
  - The total waste collected by Poole Borough Council that was managed in the county was 78,331 t; of which 38,655 t was recycling/composted, 22,927 t was incinerated with energy recovery, 13,370 t was landfilled and the remainder was 'other'.

A portion of this data is presented in Sankey diagrams in Appendix B.

### 2.3.2 EA Waste Data Interrogator 2018

The 2018 EA Waste Interrogator data provided information on the total wastes managed with an origin in Dorset, categorised as Household, Industrial & Commercial (HIC), as follows.

- Dorset generated 1,759,000 t of total waste in 2018:
  - Dorset generated 1,251,000 t (71.1%);
  - East Dorset generated 108,000 t (6.2%);
  - Purbeck generated 107,000 t (6.1%); and

- Christchurch generated 94,000 t (5.3%);
- West Dorset generated 79,000 t (4.5%);
- Weymouth and Portland generated 73,000 t (4.2%); and
- North Dorset generated 46,000 t (2.6%).
- The types of waste originating in Dorset were as follows:
  - Total municipal waste (EWC chapter 20) was 610,000 t;
  - Total construction and demolition wastes (EWC chapter 17) was 580,000 t; and
  - Total waste and water treatment wastes (EWC chapter 19) was 340,000 t.
- The amount of waste sent to recovery facilities was 1,073,000 t, 280,000 t was sent to transfer stations, 176,000 t was sent to landfill, 31,000 t was sent to treatment facilities, 151,000 t was sent to incinerators with energy recovery, and the remaining was either not reported or classified as 'Other Fate'.
  - For municipal waste (EWC chapter 20), 312,000 t was sent to recovery facilities, 206,000 t was sent to transfer stations, 68,000 t was sent to landfill, 16,000 t was sent to treatment facilities, and 5,000 t was sent to incinerators with energy recovery.
  - For construction and demolition wastes (EWC chapter 17), 331,000 t was sent to recovery facilities, 36,000 t was sent to transfer stations, 65,000 t was sent to landfill, 1,000 t was sent to treatment facilities, 145,000 t was sent to incinerators with energy recovery, and the remainder was either not reported or classified as 'Other Fate'.
  - For waste and water treatment wastes (EWC chapter 19), 290,000 t was sent to recovery facilities, 37,000 t was sent to landfill, 7,000 t was sent to transfer stations, 1,000 t was sent to treatment facilities.
- The majority of Dorset's waste is managed in the South West region, 1.6 Mt, of which 1.4 Mt is managed in Dorset, whilst 175,000 t is managed in the South East.
  - The main waste types managed in Dorset were municipal waste (EWC chapter 20) 0.52 Mt, construction and demolition wastes (EWC chapter 17) 0.51 Mt and waste and water treatment wastes (EWC chapter 19) 0.23 Mt.
  - The amount of managed waste in Dorset sent to recovery facilities was 910,000 t, of which 220,000 t was sent to transfer stations, 146,000 t was sent to incinerators with energy recovery, 75,000 t was sent to landfill, 16,000 t was sent to treatment facilities and the remainder was classified as 'Other Fate'.
- Overall, Dorset managed 2.1 Mt of waste, of which the majority originated in Dorset. The larger part of the remainder (99,000 t) was produced in the South East.

### 2.3.3 Dorset County Council

- According to the Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019 the total waste generated in 2015 was 834,000 t, of which:
  - 387,000 t was LACW, broken down as follows:
    - 218,436 t from Dorset;
    - 98,795 t from Bournemouth; and
    - 79,820 t from Poole; and
  - 447,000 t was commercial and industrial waste.



- LACW management methods for 2015/16 were as follows:
  - In Dorset; 60% was reused, recycled and composted, 21% was landfilled, and 5% was sent for residual waste treatment;
  - In Bournemouth; 44% was reused, recycled and composted, 12% was landfilled, and 29% was sent for residual waste treatment; and
  - In Poole; 42% was reused, recycled and composted, 12% was landfilled, and 6% was sent for residual waste treatment.
- Approximately 85% of the wastes generated in Bournemouth, Dorset and Poole in 2015 were managed within the county.
- Approximately 447,000 t of C&I wastes were generated in 2015/16. Some 80,329 t was sent to landfill in Dorset and a further 12,229 t went to landfill outside of the County (based on the baseline for Commercial & Industrial Wastes and Construction, Demolition and Excavation Wastes Report October 2017).

### *Movements of Waste*

- In 2015, of the 2.17 Mt of waste originating in Dorset, around 85% (around 1.86 Mt was managed within Dorset, whilst 15% (around 322,400 t) was exported to facilities outside of Dorset (based on DWLP Background Paper 3 2017 using 2015 Waste Data Interrogator data).
- Whilst 322,400 t of Dorset's waste was exported, some 312,000 t was imported from neighbouring waste authorities, with the majority coming from Hampshire. Therefore, Dorset is a net exporter of waste and this position can partly be attributed to the closure of all of Dorset's landfill sites (DWLP Background Paper 3 2017 – section 2.2 page 6).
- Dorset Waste Partnership residual waste is managed under two contracts. One is with New Earth Solutions, associated with its MBT plant at Canford Magana, Poole. This contract runs to August 2021, with a guaranteed 40,000 t per annum. The other contract is with Veolia ES Hampshire Limited, associated with its Marchwood EfW facility in Hampshire, which was extended to August 2021 (Dorset Waste Partnership Joint Committee Paper 14 December 2015).
- The DWLP assumes that Dorset's residual waste will continue to be sent to Walpole Landfill in Somerset (10,000 tpa to 2020) and Blue Haze landfill in Hampshire (5,000 tpa to end of 2020) (DWLP Background Paper 3 2017 – section 2.2 page 7).
- Some of Poole's residual waste is managed at the EfW plant in Slough and the DWLP assumes that 17,000 tpa will continue to be sent there to the end of 2027.
- In addition to landfill contacts for Dimmer (2,898 t) and Blue Haze (17,807 t), movements of non-hazardous residual waste (1,000 t or more) from Dorset, Bournemouth and Poole were made to other landfills in 2015, these being Squabb Wood and Poundbottom landfills in Hampshire (DWLP Background Paper 3 2017 – section 3.3.1 page 8 and 9).
- The continued management of waste arisings from Dorset, Bournemouth and Poole at these landfill sites is unlikely to be possible in the long term (DWLP Background Paper 3 2017 – section 3.3.1 page 10).
- The Blue Haze landfill site is close to the Dorset border and is likely to accept C&I wastes as well as household waste. However, the site only has planning permission to 2020. The Squabbs Wood and Poundbottom landfills also have limited planning permissions and capacity, such that continued movements of waste to these sites has not been factored into the DWLP (DWLP Background Paper 3 2017 – section 3.4.1 page 14 and 15).
- In 2015, some of Dorset and Poole's waste went to Viridor's EfW facility at Ardley in Oxfordshire, which is likely to be a consequence of the pending closure of Viridor's Trigon landfill site in Dorset (DWLP Background Paper 3 2017 – section 3.3.3 page 13).

- The management of LACW outside Dorset is largely tied to contracts, with significant quantities of recyclate and residual waste being managed in Hampshire, Somerset, Slough, Bexley and Flintshire. This is in part due to a lack of appropriate facilities in Dorset. Restrictions have also been identified on the future movement of non-hazardous waste to external landfill sites. (DWLP Background Paper 3 2017 – section 5 page 28).

A diagram of the potential feedstock flows within Dorset is presented in Appendix C.

## Projections

The Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019 presents projections of arisings for Local Authority collected waste (LACW) and Commercial & Industrial (C&I) waste.

- Total arisings 2018 = 862,000 tonnes; 394,000 of LACW and 468,000 of C&I waste.
- Total arisings 2023 = 911,000 tonnes; 414,000 of LACW and 497,000 of C&I waste.
- Total arisings 2028 = 965,000 tonnes; 433,000 of LACW and 532,000 of C&I waste.
- Total arisings 2033 = 1,025,000 tonnes; 453,000 of LACW and 572,000 of C&I waste

Bournemouth, Dorset and Poole Waste Plan, Background Paper 3 also provides projections for waste arisings

- Projected waste arisings for 2018 were 1,718,500 t; expected to be split as follows:
  - 394,000 t LACW;
  - 468,000 t C&I ;
  - 801,800 t CD&E waste; and
  - 61,500 t hazardous waste.
- Projected waste arisings for 2023 were 1,979,700 t, expected to be split as follows:
  - 413,800 t LACW;
  - 491,700 t C&I waste;
  - 1,005,200 t CD&E waste; and
  - 69,000 t hazardous waste.
- Projected waste arisings for 2028 were 2,203,700 t, expected to be split as follows:
  - 433,300 t LACW;
  - 520,500 t C&I waste;
  - 1,173,400 t CD&E waste; and
  - 76,500 t hazardous waste.
- Projected waste arisings for 2033 were 2,445,200 t, expected to be split as follows:
  - 448,900 t LACW;
  - 554,600 t C&I waste;
  - 1,357,700 t CD&E waste; and
  - 84,000 t hazardous waste.
- Four sites are allocated in the DWLP, with a projected total potential capacity of around 385,000 tonnes per annum (tpa).

- The DWLP recognises that there is a potential shortfall of around 232,000 tpa at the end of the plan period and there is a need to make provision for facilities to manage residual waste (table 7).

Graphical representations of the projected arisings are provided in Appendix B.

## 2.4 RDF (National, South West Region and Dorset)

### 2.4.1 EA Waste Interrogator 2018

The 2018 EA Waste Interrogator data provided information on the total wastes generated in England categorised under EWC waste code '19 12 10 combustible waste (refuse derived fuels)', as follows.

- England generated 6.4 Mt of RDF waste in 2018.
  - The North West (1.4 Mt), London (1.18 Mt) and Yorkshire & Humber (893,000 t) accounted for the majority of RDF production.
- 2.8 Mt of the total was exported outside of the UK for management and 3.5 Mt was managed within England, with around 11,000 t going to the South West region.
- Of the total managed in England, 3.1 Mt was sent to treatment facilities, with the majority of this sent to incinerators (2.9 Mt), with the remainder sent to recovery facilities (291,000 t), to landfill (64,000 t) or was 'other'.
- The South West region generated around 345,000 t of RDF, with the majority produced in Bristol (199,000 t), followed by Poole (89,000 t), Wiltshire (29,000 t) and Swindon (27,000 t), with the remainder coming from Somerset.
- The majority of the RDF produced in the South West region (281,000 t) was exported outside of the UK for management. The remainder was managed in England, with only 9,200 t staying within the region.
- Of the RDF produced in the South West, 286,000 t was sent to treatment facilities (mainly incinerators), 57,800 t went to recovery facilities and 1,200 t went to landfill.

A portion of this data is presented in Sankey diagrams in Appendix B.

### 2.4.2 Footprint Services RDF Export Dashboards

Footprint services RDF Export Dashboards: Overview statistics for RDF exports from England – Reporting Month March 2020<sup>12</sup> provides the following information.

- Total exports were 2,450,000 t: of which:
  - 2,120,000 t was RDF; and
  - 333,000 t was SRF.
- Of the total, 981,000 t was exported to the Netherlands, 575,000 t to Sweden, 367,000 t to Germany, 132,000 t to Norway and 107,000 t to Denmark.
- For the prior 12 months, 3,118,911 t was exported. The top three destinations were the Netherlands (1,306,397 t), Sweden (574,595 t) and Germany (470,699 t), with the remainder going to 14 other countries in Europe and elsewhere.

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<sup>12</sup> <https://www.footprintservices.co/communities/7/004/013/621/507/files/4637116277.pdf>

Footprint services RDF Export Dashboards: Overview statistics for RDF exports from England – Reporting Month February 2020<sup>13</sup> provides the following information.

- Total exports were 2,530,000 t: of which:
  - 2,190,000 t was RDF; and
  - 344,000 t was SRF.
- Of the total RDF produced, 1,040,000 t was exported to the Netherlands, 560,000 t to Sweden, 375,000 t to Germany, 140,000 t to Norway and 105,000 t to Denmark.
- For the prior 12 months, 3,142,846 t was exported. The top three destinations were the Netherlands (1,312,922 t), Sweden (603,966 t) and Germany (489,406 t), with the remainder going to 14 other countries in Europe and elsewhere.

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<sup>13</sup> <https://www.footprintservices.co/communities/7/004/013/621/507/files/4636997157.pdf>

## **APPENDIX A      LIST OF DOCUMENTS**

## LIST OF DOCUMENTS

Document title	Source	Summary	Link
ERM WDI Extract_All waste 24042020.xlsx	Waste Data Interrogator 2018  Environment Agency	ERM's extract from WDI showing Household, Industrial & Commercial waste managed by England: <ul style="list-style-type: none"> <li>■ Total Managed by England</li> <li>■ Origin Region, WPA and District of waste</li> <li>■ Total Managed by each Region, WPA and District;</li> <li>■ Type of Waste Managed categorised by EWC Chapter</li> <li>■ Fate Category for total waste managed; and</li> </ul>	<a href="https://bit.ly/3eEzdUL">https://bit.ly/3eEzdUL</a>
ERM EA Interrogator Extract_RDF 27042020.xlsx	Waste Data Interrogator 2018  Environment Agency	ERM's extract from WDI showing waste categorised as '19 12 10 combustible waste (refuse derived fuels)' managed by England: <ul style="list-style-type: none"> <li>■ Total generated by England and South West region</li> <li>■ Origin region and WPA of waste</li> <li>■ Management destination of waste</li> <li>■ Fate of total generated;</li> </ul>	<a href="https://bit.ly/2MjBMzm">https://bit.ly/2MjBMzm</a>
Local Authority Waste Collection.xlsx	DEFRA	ERM's extract from the ENV18 Local authority collected waste data set: <ul style="list-style-type: none"> <li>■ Table 2 – Management of Local Authority Waste, 2014-15 – 2018-19; <ul style="list-style-type: none"> <li>- PT 2.1 Management of LACW by fate for England regions for 2018/19;</li> </ul> </li> <li>■ Table 3 – Selected waste indicators 2010-11 – 2018-19 (residual household waste per household (kg); percentage of household waste sent for reuse, recycling, composting; percentage of municipal waste sent to landfill; collected household waste per person (kg); <ul style="list-style-type: none"> <li>- PT 3.1 – Selected waste indicators for England regions for 2018/19; and</li> </ul> </li> <li>■ Table 3b – Overall recycling rates 2000-2001 to 2018-2019, England.</li> </ul>	<a href="https://bit.ly/3c8K0Wb">https://bit.ly/3c8K0Wb</a>

## **APPENDIX B**

## **SANKEY DIAGRAMS AND GRAPHICAL REPRESENTATIONS OF DATA**

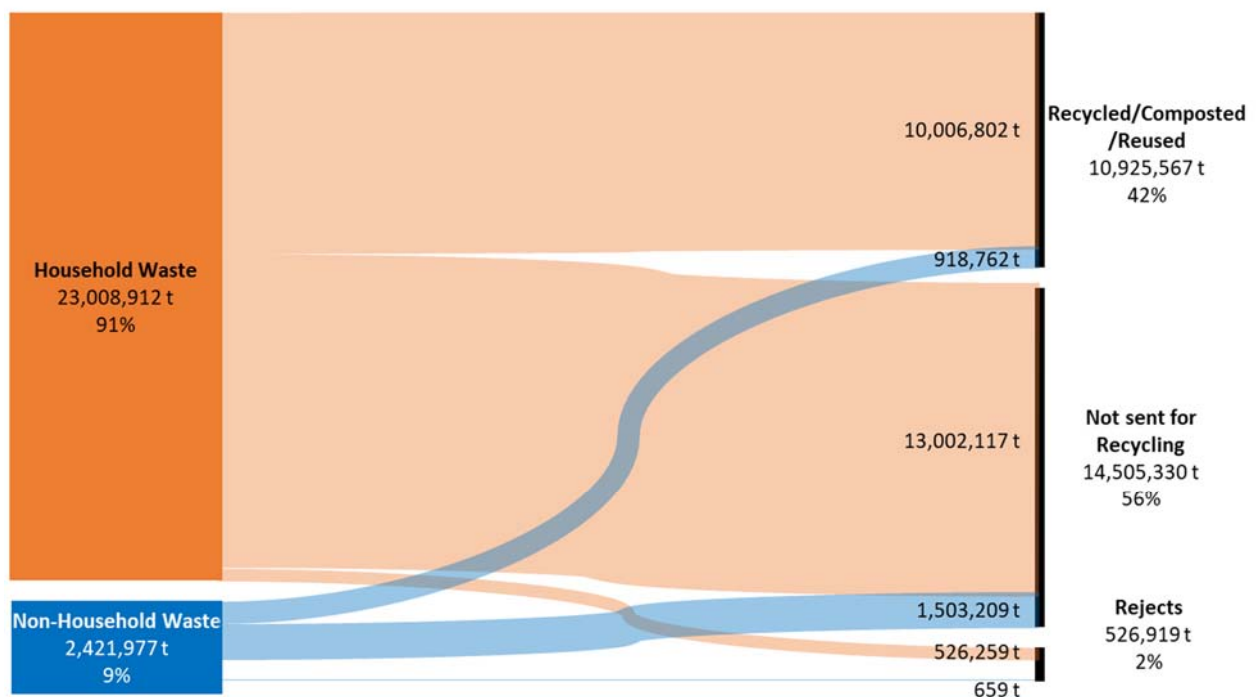
## SANKEY DIAGRAMS AND GRAPHICAL REPRESENTATIONS OF DATA

Data for England, South West and Dorset graphics were taken from dataset ENV18, Local Authority Collected Waste (LACW), published by DEFRA and are displayed in tonnes (t); see sections 2.1.3 for England, 2.2.2 for the South West and 2.3.1 for Dorset. Data for RDF waste were taken from the Environment Agency (EA) Waste Data Interrogator (WDI) for 2018, see section 2.4.1.

### England Context

#### Collected Waste

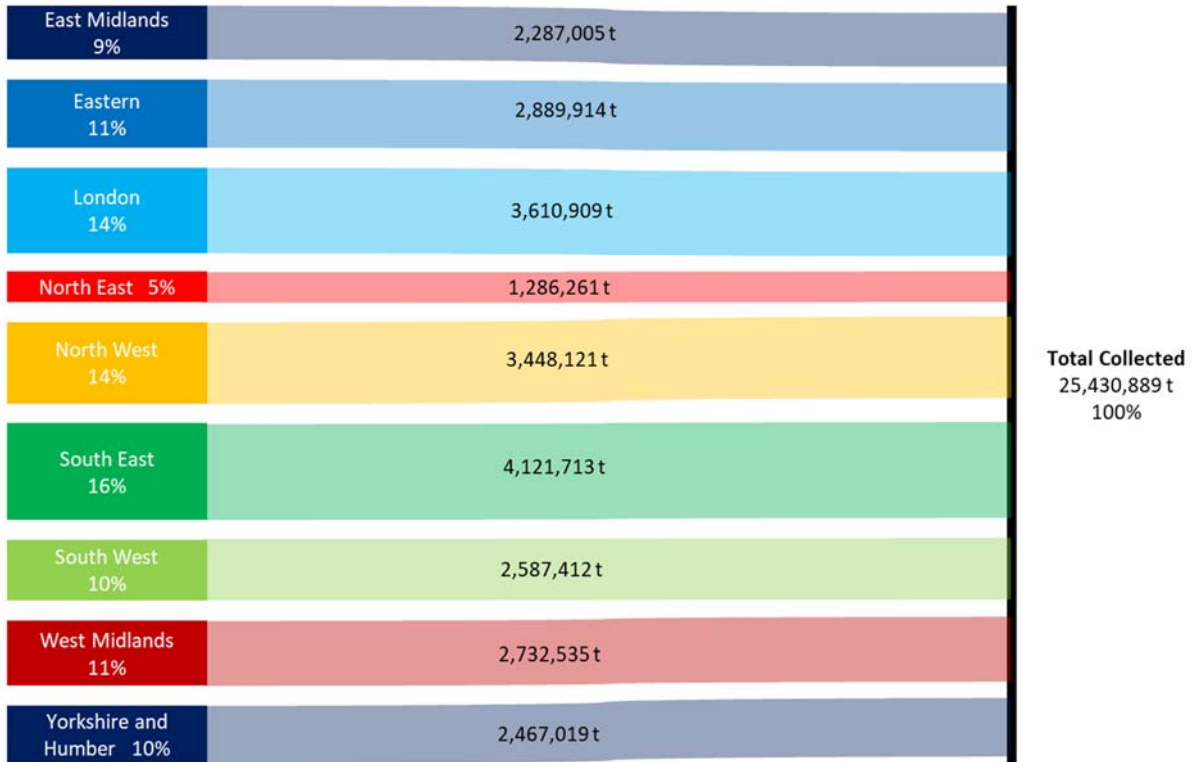
In 2018/19, a total of 25,430,889 tonnes of waste was collected by local authorities in England. Of this, 91% was household waste and 9% was non-household waste, as presented in the Sankey diagram below. Of the total: 42% was sent for recycling, composting or reuse; 56% was not sent for recycling; and there was an estimated 526,919 tonnes of rejects.



The following diagram shows the regional breakdown for total local authority collected wastes. The highest amount of waste was collected by South East local authorities, making up 16% of the total. Next was London and the North West, each accounting for 14% of the total. The South West region accounted for 10% of the total collected.

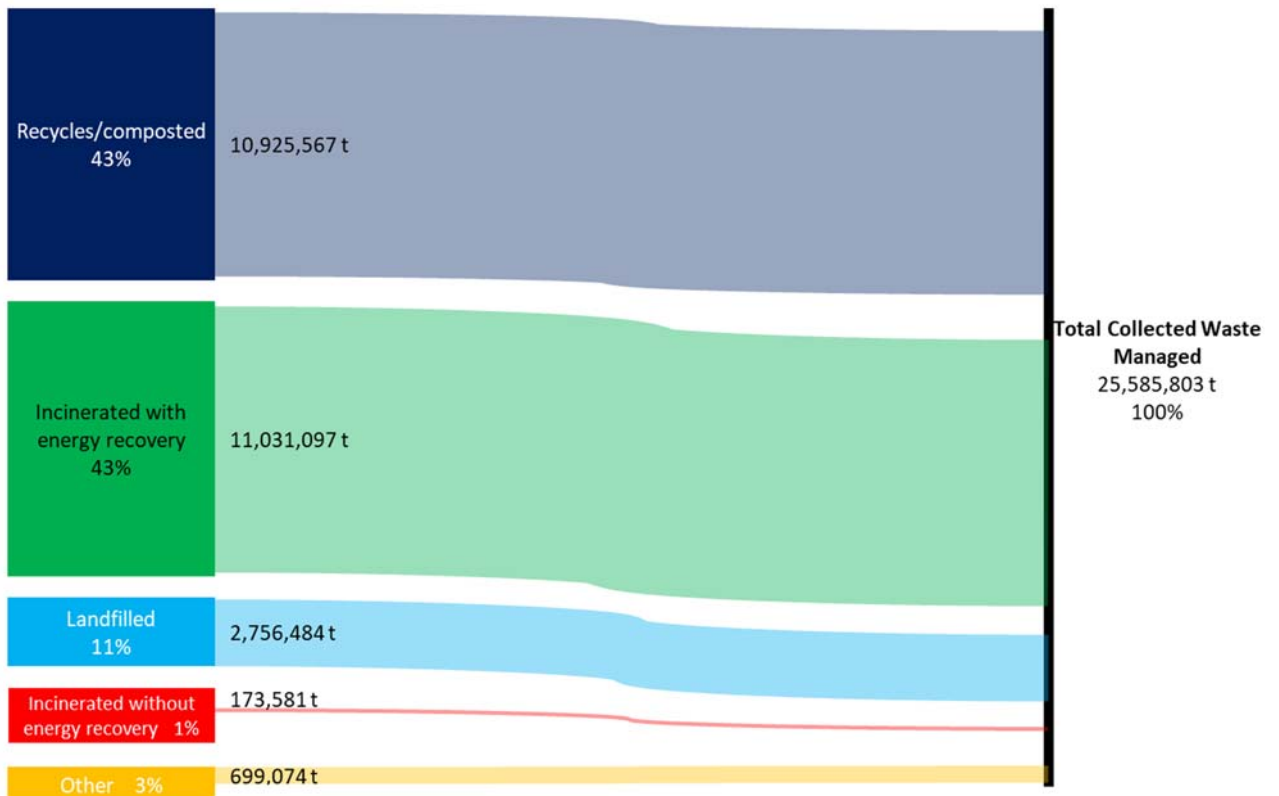
In terms of the split between household and non-household waste, in every region household waste accounted for more than 82% of the total, with the highest proportion being 94%. Furthermore, all regions send less than 50% of these wastes to recycling/composting/reuse. The proportion in the South West is the largest, at 49% of the total. London has the lowest proportion, with only 30% sent for recycling/composting/reuse.





### Fate of Waste

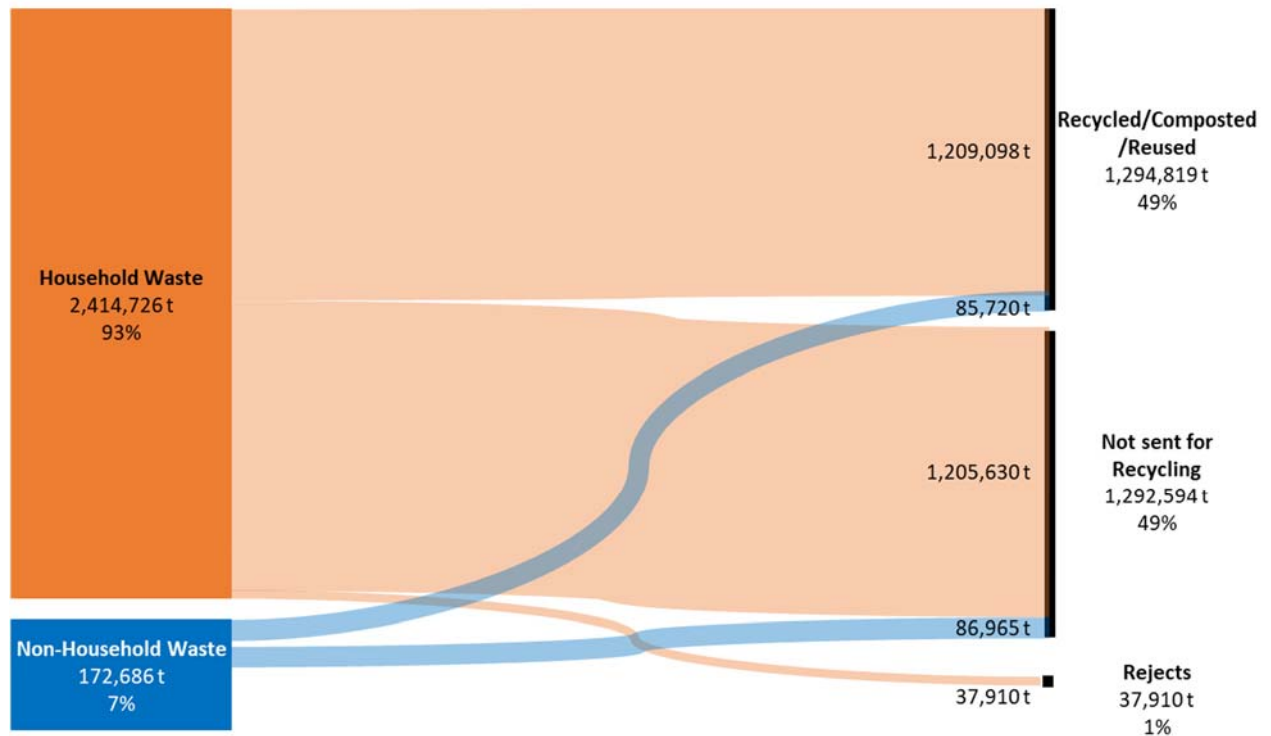
The total quantity of collected waste managed in England was 25,585,803 t. This figure does not match with that quoted above for total Local Authority collected waste. This is due to the stockpiling of waste between reporting periods. The management destination of the waste is unknown.



## South West Context

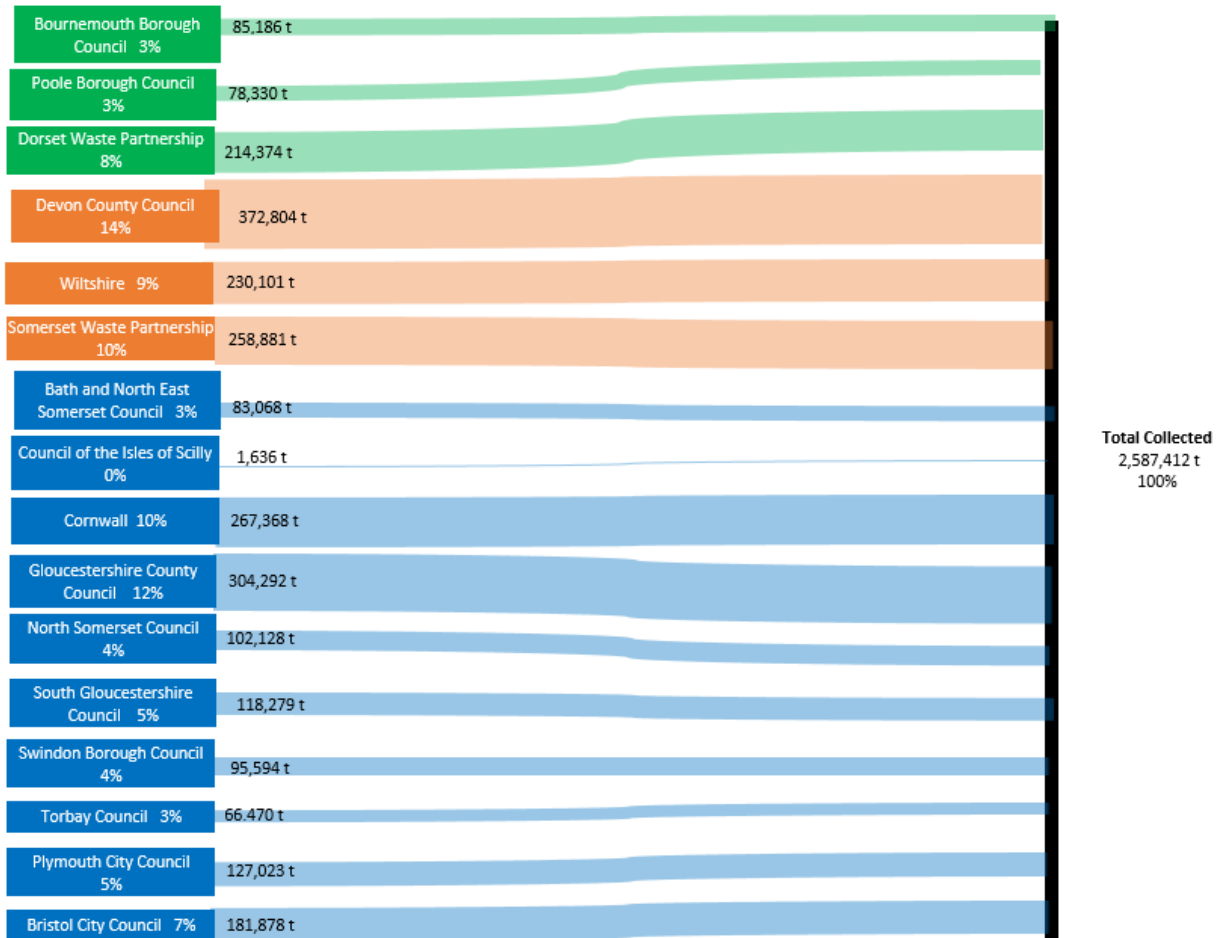
### Collected Waste

In 2018/19, a total of 2,587,412 t of waste was collected by local authorities in the South West region. Of this, 93% was household waste and 7% was non-household waste, as presented in the Sankey diagram below. Of the total: 49% was sent for recycling, composting or reuse; 59% was not sent for recycling; and there was an estimated 37,910 t of rejects



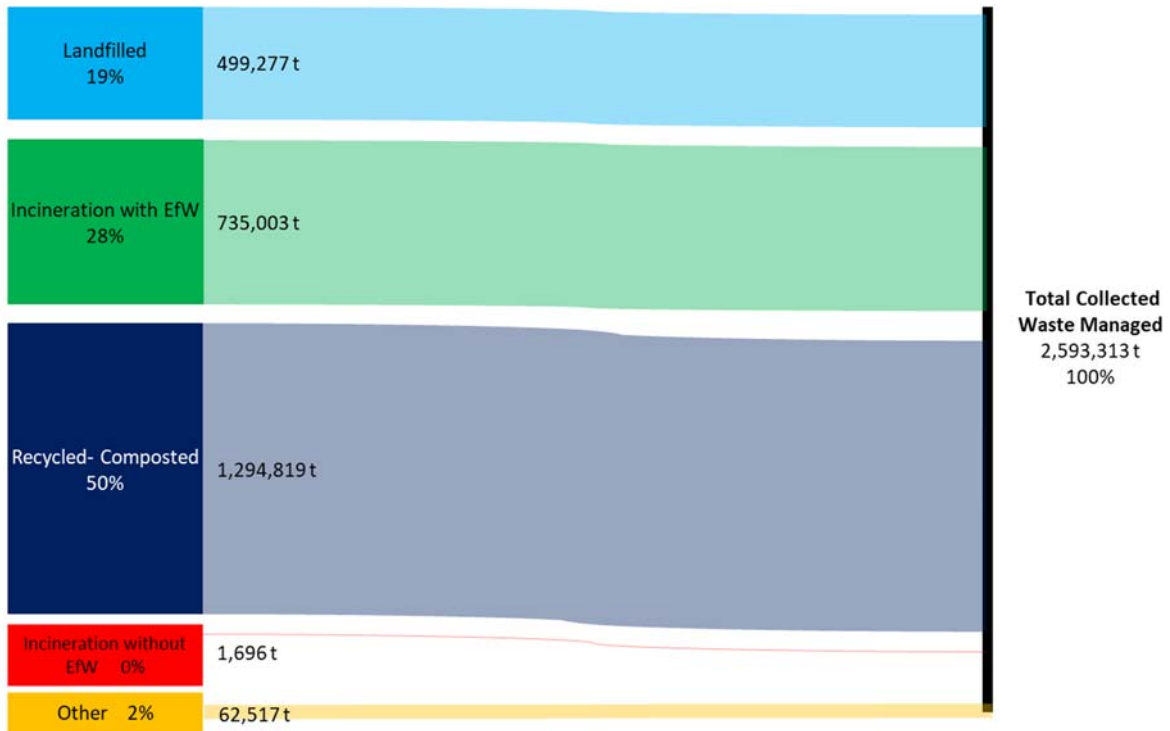
The following diagram shows the regional breakdown for total local authority collected wastes for the South West region. Local authorities highlighted in green represent the Dorset Context, which is explored more in the following section. Those highlighted in orange represent those principal local authorities within a 3-hour HGV drive time radius, and accounting for 33% of the total waste collected in the region. Other local authorities are highlighted in blue, and account for 52% of the total waste collected. Devon County Council collected the largest proportion of waste, accounting for 14%. Next was Gloucestershire County Council, accounting for 12%, and then Cornwall and the Somerset Waste Partnership, each accounting for 10%.

In terms of the split between household and non-household waste, in every region household waste accounted for more than 86% of the total. The highest proportion of household waste is 100%, in the special circumstances of the Council of the Isles of Scilly. There is variance between local authorities in terms of the proportion that is sent to recycling/composting/reuse. In total, seven local authorities send 50% or more waste to recycling/composting/reuse. The remaining nine local authorities send less than 50% to recycling/composting/reuse.



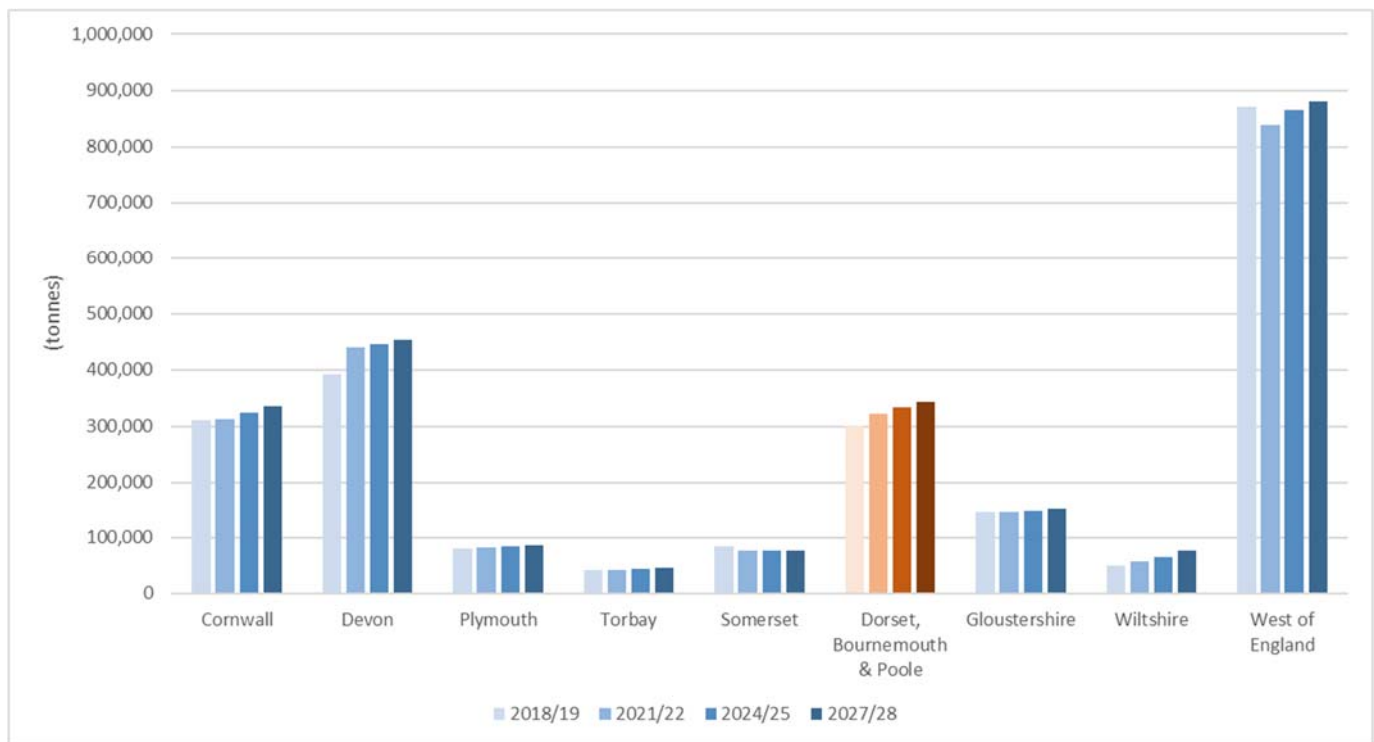
### Fate of Waste

The total quantity of collected waste managed via different routes in the South West region was 2,593,313 t. This figure does not match that quoted above for total Local Authority collected waste, due to the stockpiling of waste between reporting periods. The management destination of the waste is unknown.



### Projections

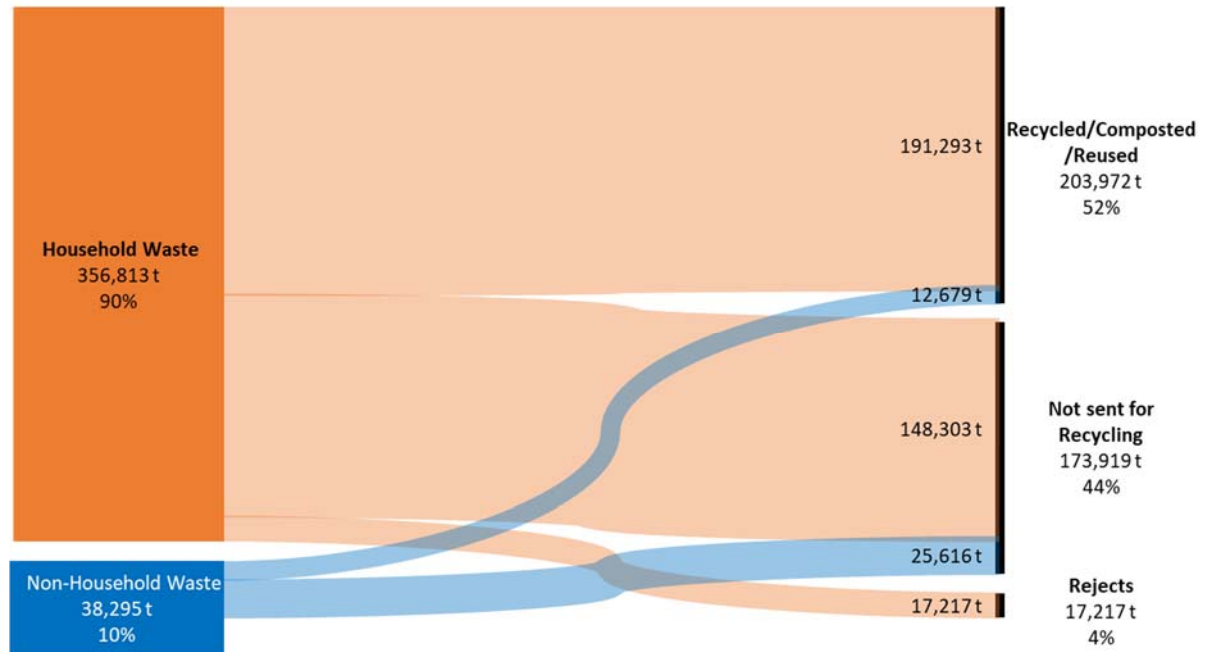
In 2017, the South West Waste Technical Advisory Board published projected quantities of Residual Waste (requiring energy recovery or landfill) generated in the South West Region are presented below for the period 2018/19 through to 2027/28.



## Dorset Context

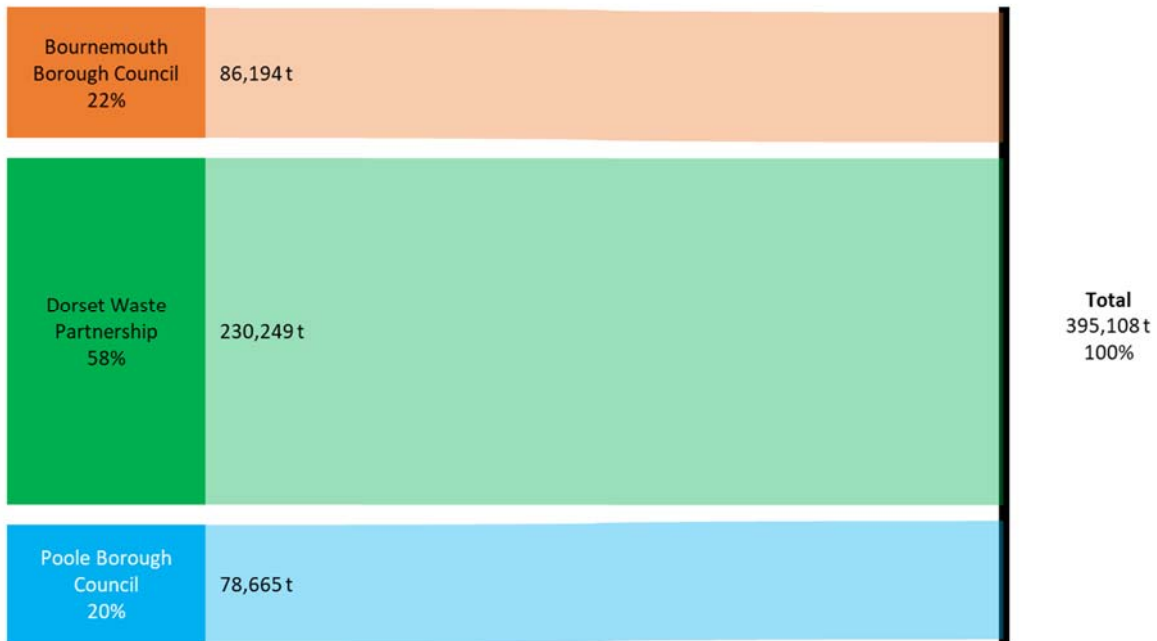
### Collection of Waste

In 2018/19, a total of 395,108 tonnes of waste was collected by local authorities in Dorset, encompassing Dorset Waste Partnership, Bournemouth Borough Council and Poole Borough Council. Of this, 90% was household waste and 10% was non-household waste, as presented in the Sankey diagram below. Of the total: 52% was sent for recycling, composting or reuse; 44% was not sent for recycling; and there was an estimated 17,217 tonnes of rejects.



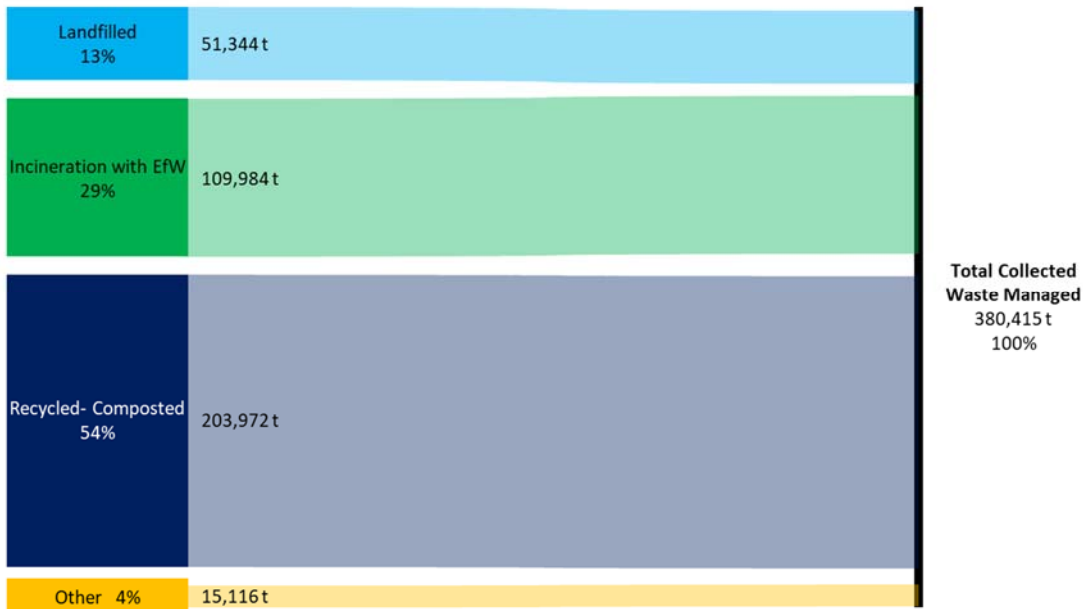
The following diagram shows the regional breakdown for the total local authority collected wastes for the Dorset context. Dorset Waste Partnership collected the largest proportion of the total, accounting for 58%. Next was Bournemouth Borough Council, accounting for 22%, and then Poole Borough Council, accounting for 20%.

In terms of the split between household and non-household waste, in household waste accounted for more than 85% of the total in all local authorities. The highest proportion was 92%, for the Dorset Waste Partnership. There is variance between the local authorities in terms of the proportion that is sent to recycling/composting/reuse. The Dorset Waste Partnership sends 54% of the collected waste to recycling/composting/reuse. The other two authorities each send 49% to recycling/composting/reuse.



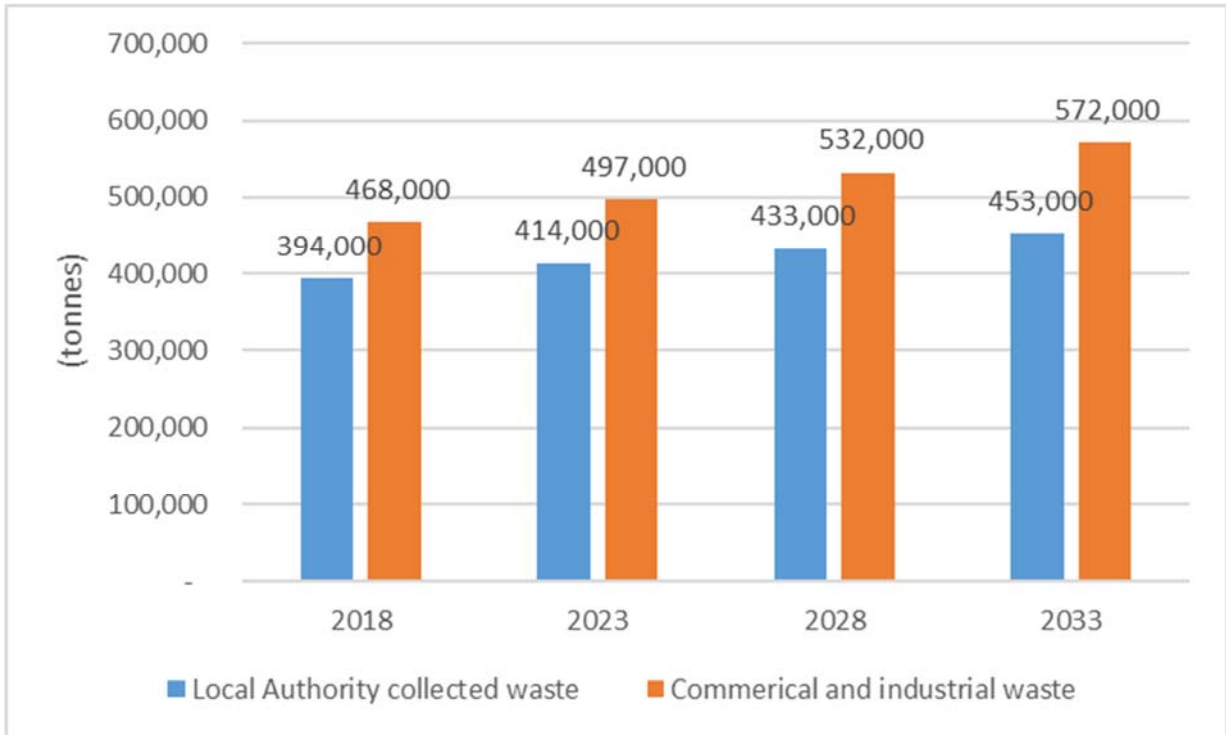
### Fate of Waste

The total quantity of collected waste managed in Dorset was 380,415 t, encompassing Dorset Waste Partnership, Bournemouth Borough Council and Poole Borough Council. This figure does not match that quoted above for total Local Authority collected waste, due to the stockpiling of waste between reporting periods. The management destination of the waste is unknown.



### Projections

The Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019 presents projected arisings of local authority collected waste and commercial and industrial waste for Dorset, Poole Christchurch and Bournemouth. These are presented in the table below.

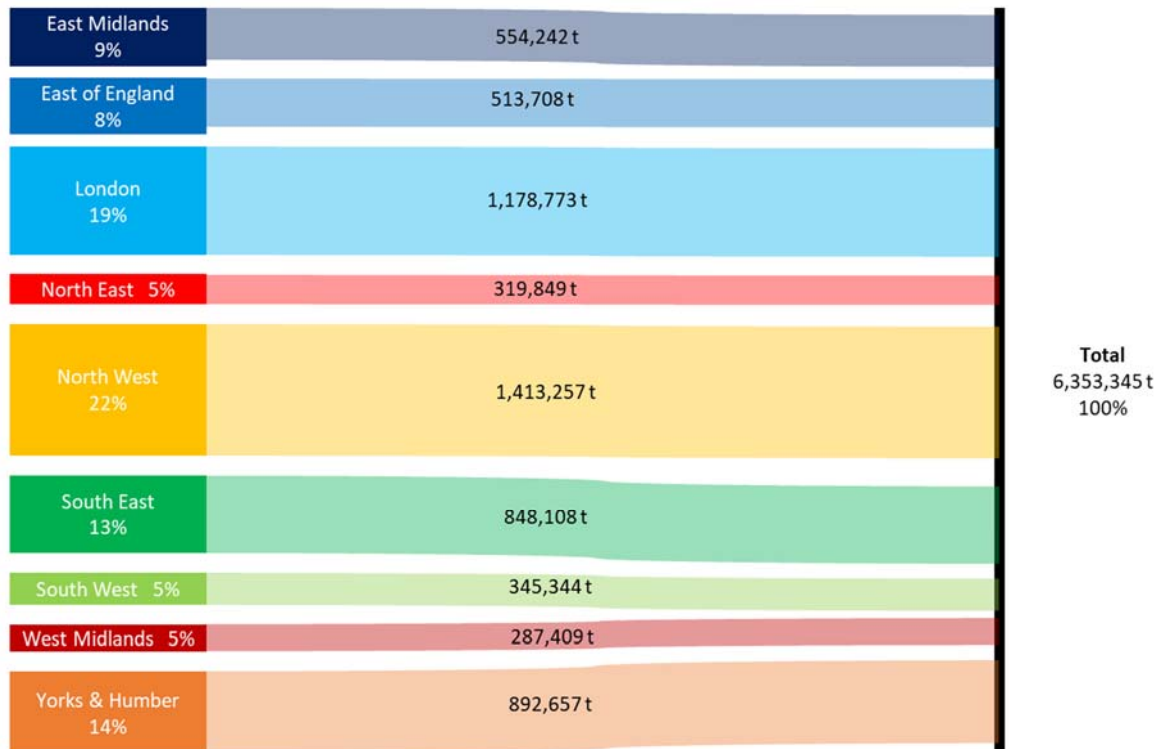


Bournemouth, Dorset and Poole Waste Plan, Background Paper 3 also provides projections for waste arisings. This includes projections for local authority collected, industrial, construction, demolition and excavation wastes as well as hazardous wastes.

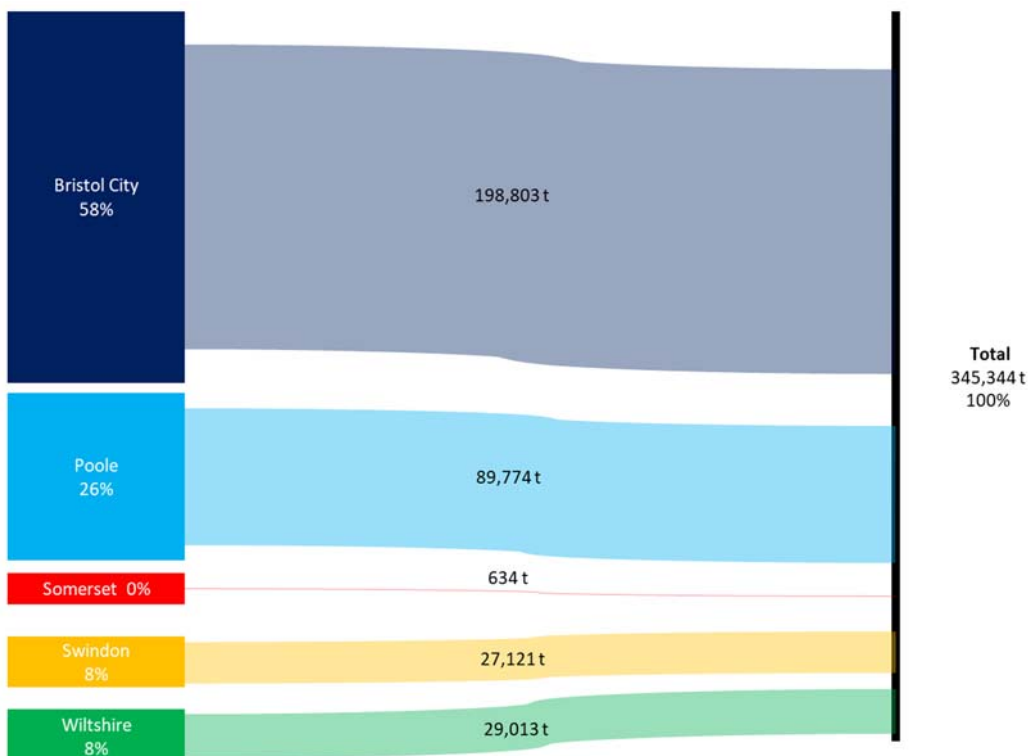


## RDF Waste

According to the EA Waste Data Interrogator 2018, England produced 6,353,345 tonnes of RDF (EWC category '19 12 10 combustible waste (reuse derived fuel)'). The regional breakdown for the origin of this waste is presented in the diagram below. The North West region produced the largest proportion, accounting for 22%, followed by London, accounting for 19% and Yorkshire and Humber, accounting for 14%. The South West region accounted for only 5% of RDF produced in England.

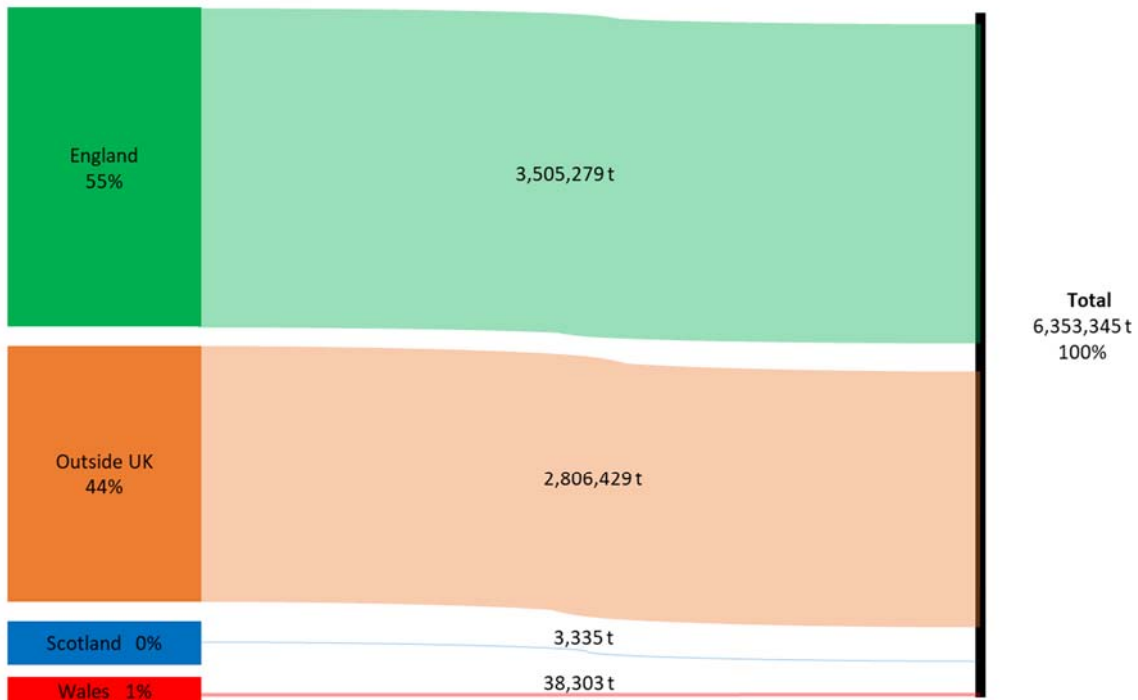


The following diagram presents a breakdown of RDF arisings in the South West. The majority of the waste originated in Bristol City, accounting for 55%, followed by Poole, accounting for 26%.

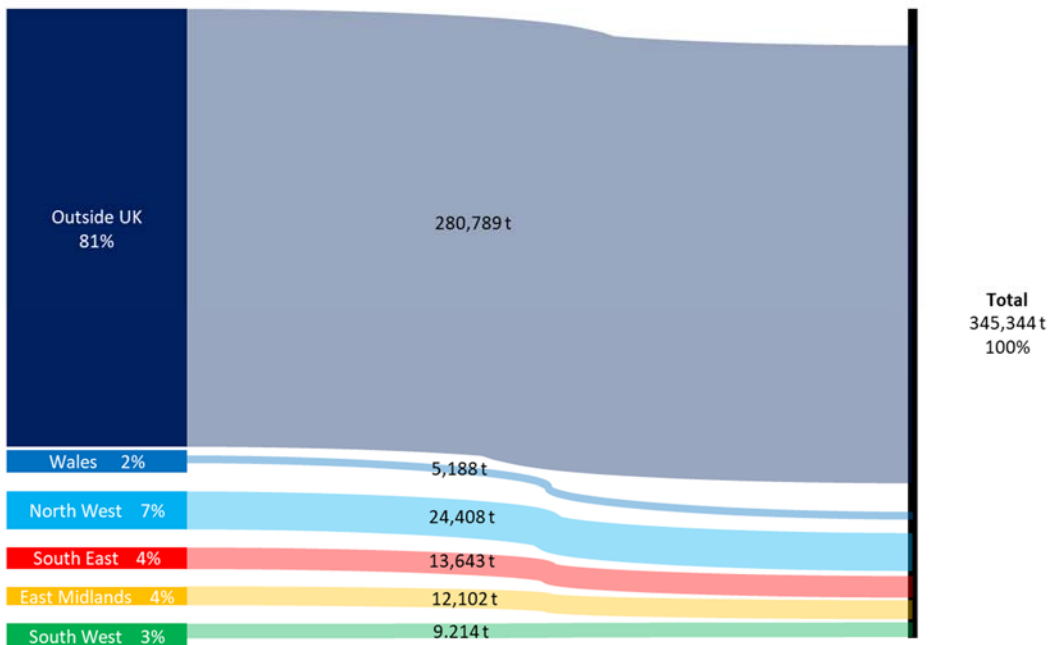




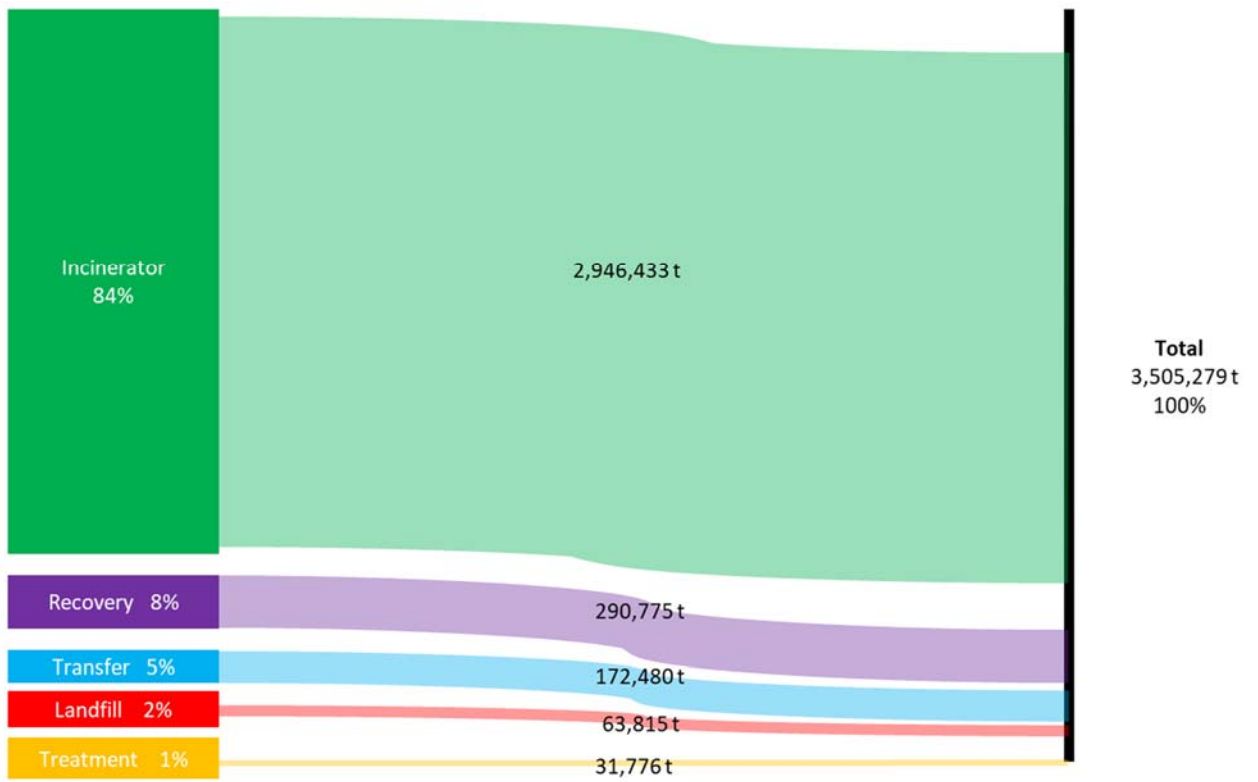
A large proportion of the total RDF (44%) was exported outside of the UK for management. The rest was managed in England (55%); Wales (1%); and Scotland (>1%).



Of the total arising in the South West, the majority was exported outside of the UK for management with only 3% staying within the region.

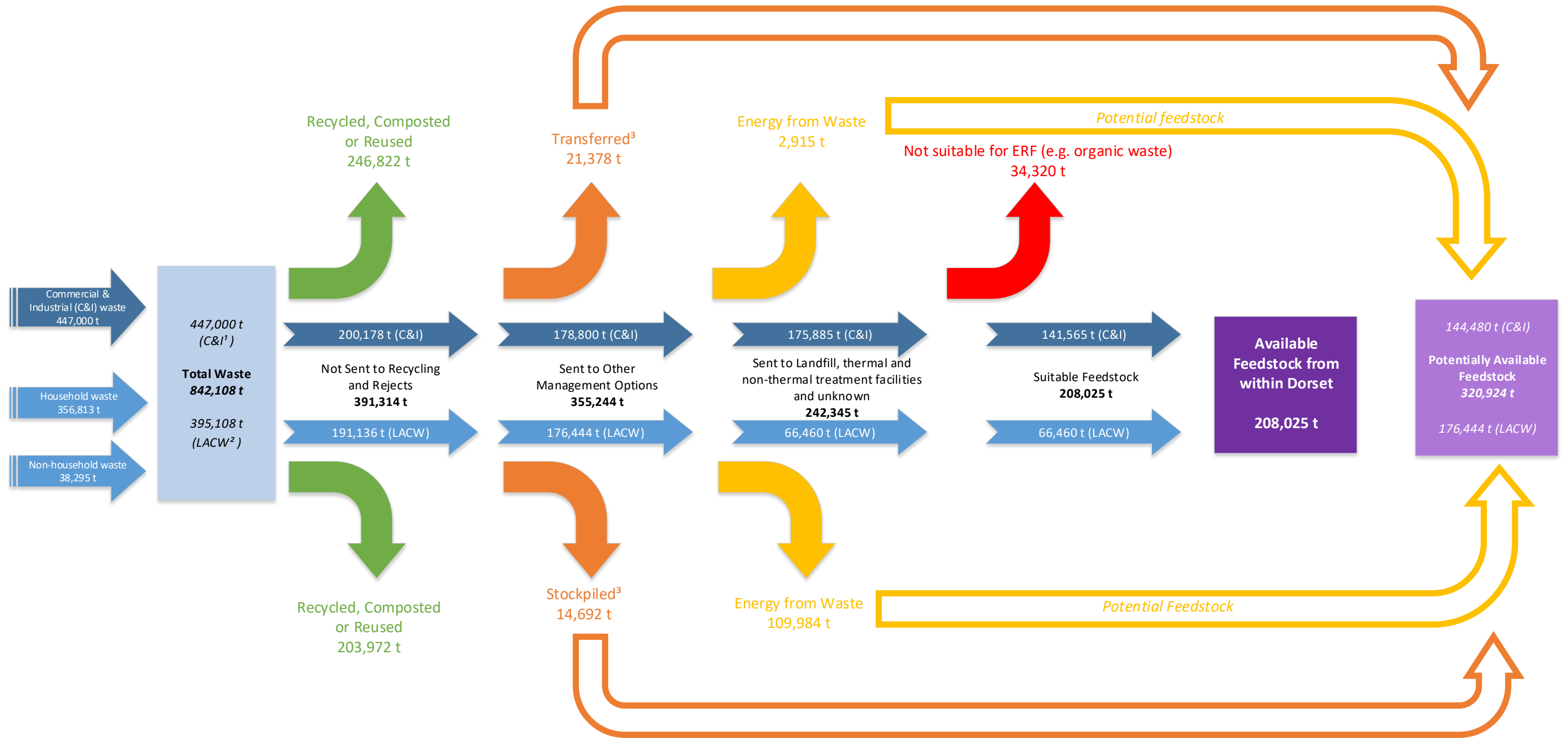


The waste staying in England to be managed mainly went to energy from waste plants, accounting for 84% of the total. A breakdown of the fate of the RDF arisings is presented in the diagram below.



## **APPENDIX C**

## **DORSET AVAILABEL FEEDSTOCK WASTE FLOW DIAGRAM**



**Footnotes**

1. There are currently no systems in the UK that require C&I waste to be reported by type, sector and management method therefore the data used, from 2015, is the most up-to-date figures available. This figure was taken from the Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019. The management method and unsuitable feedstock figures have been estimated using the percentage split from DEFRA's Commercial and Industrial Waste Survey 2009 figures, also provided in the Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019: Background paper 1.
2. The LACW waste figures have been taken from dataset ENV18 - Local authority collected waste: annual results tables published by DEFRA for financial year 2018/19. This includes the Household waste and Non-household waste figures.
3. Even though the Transferred and Stockpiled streams are reasonable prospects for the proposed plant, not all this waste will be suitable for the Energy Recovery Facility, therefore these waste streams have been removed from the 'Potentially Available Feedstock' calculation.

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