

# Landfill and Residual Treatment Capacity in the Wider South East of England

including the

- East of England
- the South East of England
- London

for the

**East of England Waste Technical Advisory Body**

**South East Waste Planning Advisory Group**

**London Waste Planning Forum**

## Final Report

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# 1 Introduction

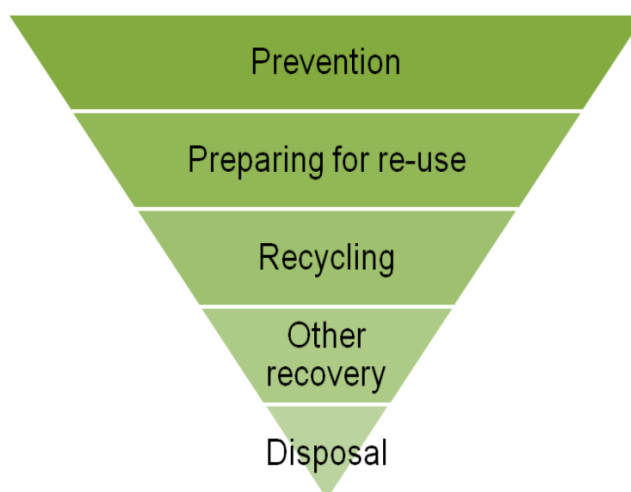
The purpose of this report is to obtain an understanding of the current requirement for residual waste management capacity in an area known as the Wider South East, which covers the planning regions previously known as the East of England, the South East of England and London. These three regions are closely inter-related with a significant part of this area comprising the travel to work area for London. Waste from London has historically been sent to landfill in sites outside the Capital and waste management facilities are more commonly located outside the dense urban area. The high land values in London also make development of waste management facilities difficult there, although the land values in many of the areas surrounding London are also very high for residential and commercial uses.

There is therefore a need to understand the waste management capacity available in the wider region. This report has been commissioned by the Regional Waste Planning Advisory Groups for each of the three regions: the London Waste Planning Forum, the East of England Waste Technical Advisory Body and the South East Waste Planning Advisory Group. The membership of these three groups is given in Appendix 2. The Report takes information gathered for each of these bodies and brings it together in a single report so as to provide an overall snapshot picture for the Wider South East of England.

The report has been drafted by Sacks Consulting in conjunction with Cool Planet Resources and Vitaka Consulting. These three consultants are the convenors of the respective Waste Planning Advisory Groups for the East of England, the South East of England and London.

Ideally, local planning authorities would benefit from understanding the total waste management capacity in the UK, but this information is not currently available. It is hoped that this gap in the information at a UK or national (England) level will be filled by central Government, notwithstanding a number of very useful industry reports that have been issued in recent years.

A particular area of focus for all three regional planning groups is the extent to which waste management capacity for managing 'residual non-hazardous waste' is being developed. This is with both a concern to ensure sufficient capacity is available to meet future needs, but also to ensure waste will be managed in accordance with the Waste Hierarchy (see Fig 1).



**Figure 1 The Waste Hierarchy**

The Waste Planning Authorities in the Wider South East of England all have Waste Plans at various stages of preparation or adoption. Data for this report has been taken from these Plans and the background information supporting them, as well as the Environment Agency's Waste Data Interrogator, the London Plan and discussions with Council officers and some operators.

Most Waste Planning Authorities have planned for net self-sufficiency so as to have sufficient waste management capacity in their area to manage the equivalent amount of their total waste arisings. However, in practice only some of these planned facilities have been delivered and waste is often managed in neighbouring authority areas or further afield.

While it is desirable that there is self-sufficiency among the WPAs of the Wider South East, it should also be noted that there are a number of residual waste management facilities outside this area that have contracts to treat waste arising within the area. A key example of this is the Severnside EfW in South Gloucestershire which manages waste from West London. This reveals the limitations of a regional study and further work for the UK would usefully address these.

The report is concerned with the management of non-hazardous waste that cannot be recycled. "Non-hazardous waste" can also be defined as the Local Authority Collected Waste (LACW) and Commercial and Industrial (C&I) waste streams.

Non-hazardous waste management capacity includes landfill, thermal treatment facilities (energy from waste) and a proportion of mechanical biological treatment (MBT). It does not include the capacity to manage organic wastes such as composting and anaerobic digestion facilities, recycling capacity nor capacity to manage inert wastes at landfill or recycling centres.

The London Plan includes MBT capacity in the definition of waste "management" and therefore Boroughs can count MBT capacity towards their contribution for net self-sufficiency. For the purposes of this Study, 10% of input material is assumed to be extracted for recycling and is therefore excluded from the calculation for residual waste capacity. Of the remaining throughput, 30% has been counted as residual waste management capacity, equivalent to the average amount of waste reduction through moisture removal. Refuse Derived Fuel (RDF) is mainly sent to export as discussed below.

It should be noted that this report reflects a moment in time (snapshot), and the most up to date data available (2019) has been used. Residual waste management capacity is likely to change over time as new capacity is developed, existing facilities close, waste authority contracts are procured and new legislative and tax regimes are put in place. In addition, non-hazardous waste arisings may differ from their projected amounts in light of Covid and other influences. Therefore, residual waste arisings and treatment capacity for non-hazardous waste should be monitored regularly.

## 2 Context

### 2.1 Waste arising

Recycling rates in England have plateaued just below the level of 50% of total waste arisings for LACW. The target for recycling and composting in Defra's Resources and Waste Strategy follows the EU target of 65% and significant efforts will need to be made to reach this target. Such efforts will include changes to collection systems, more separate collection and treatment of organic wastes and perhaps most importantly, improving the design of products so that they can be re-used, dismantled and recycled more easily. The main driver for such changes to product design in the UK is likely to be a system of Extended Producer Responsibility (EPR) which will require companies that place products on the market to contribute more directly to the costs of managing such products at

the end of their life. Defra has issued a consultation on EPR<sup>1</sup> for packaging and progress is expected on this work in the coming year.

## 2.2 Residual Waste Treatment Facilities

Residual waste is treated through a variety of routes including landfill, and disposal or recovery at Energy from Waste facilities. It can also be converted into RDF or Solid Recovered Fuel ((SRF), typically more highly processed than RDF) for recovery or landfilling. This report looks at the facilities available and planned to manage the material that becomes residual waste because there are currently no economic options for recycling it.

Many large non-hazardous landfill sites in the Wider South East of England have closed in the last five years. Several of these sites have been restored while others have been mothballed for possible future use. The expense of sending non-hazardous waste to landfill is largely due to the requirement to pay landfill tax which is levied at a rate of £94.15 per tonne from 1<sup>st</sup> April 2020. In addition to this, haulage costs will typically add a further £25 to £40 per tonne to the costs of disposal.

WRAP publish a report each year which gives a good picture of the overall costs of different waste management options and these reports can be found at <https://wrap.org.uk/resources/report/gate-fees-reports>

The median cost of sending non-hazardous waste to landfill before the addition of landfill tax in England was reported to be £24 per tonne although the figure for the East of England was £5 per tonne.

The total cost of disposing of non-hazardous waste to landfill can therefore easily reach £120 per tonne and cheaper options such as sending the material to energy from waste facilities either within the UK or abroad are more attractive for both local authorities and commercial waste managers.

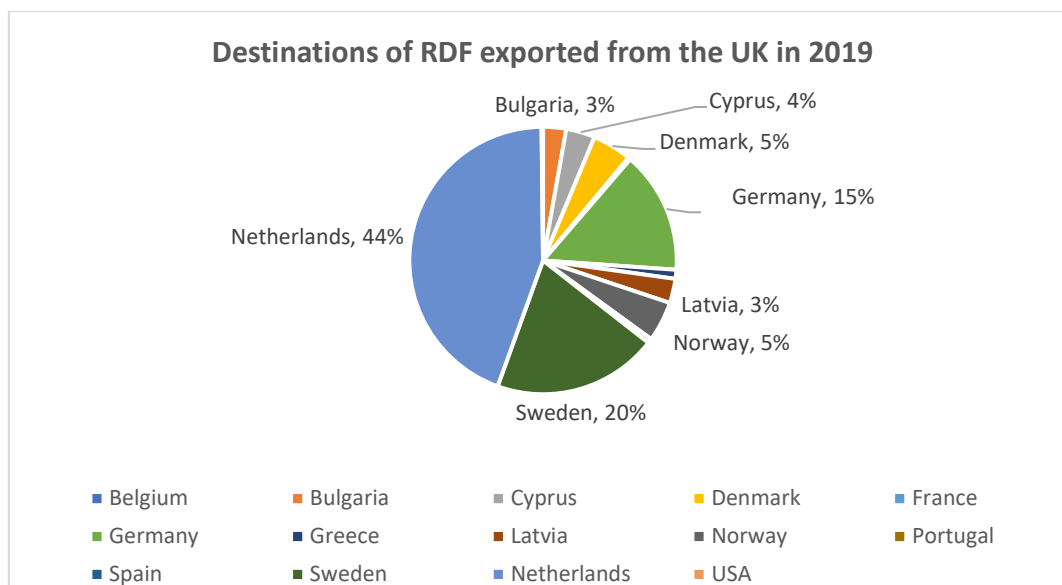
Exports or imports of waste for disposal are prohibited, except for a few exceptions. Importing and exporting waste for recovery is possible, depending on country controls, waste type and destination.

Waste sent abroad to energy recovery facilities is usually first processed into RDF or SRF. Exporters need to have a legally enforceable written contract from the buyer of the product. Currently the Energy from Waste (EfW) facilities that receive this material in continental Europe are often more energy efficient than EfW facilities in the UK because they are connected to heat networks and achieve the R1 efficiency status required for the process to qualify as energy recovery rather than waste disposal. While facilities in the UK may achieve R1 status this is often because they are built to allow heat offtake at some point in future rather than immediately following their construction.

In 2019, 2.6 million tonnes of RDF was exported from the UK. Nearly half of the RDF sent to Continental Europe is treated in the Netherlands as is shown in the chart below:

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<sup>1</sup> <https://consult.defra.gov.uk/extended-producer-responsibility/extended-producer-responsibility-for-packaging/>



**Figure 2 Destinations of RDF Exports from the UK**

Source: Environment Agency: International Waste Shipments Exported from England

<https://ea.sharefile.com/share/view/s00d603b19484ef09>

<https://data.gov.uk/dataset/18594948-d111-4dd4-a8f1-0df55eb8a94a/international-waste-shipments-exported-to-england>

However, incineration taxes are being introduced in the countries that receive waste from the UK and the costs of this treatment route will become less attractive as a result. The tax rate in the Netherlands was set at €32 per tonne in 2020. In addition, there was a significant mechanical breakdown at the single main facility in the Netherlands that receives waste from the UK which reveals a weakness in the resilience of this outlet.

EfW infrastructure has an operational life of at least 30 years and so has a considerable impact on how waste will be managed in future. If insufficient capacity is developed then waste will continue to be landfilled but, on the other hand, if too much is developed then management of waste in accordance with the waste hierarchy, in particular waste reduction and the achievement of recycling targets, may be hindered. Indeed, once capacity is operational there may be commercial pressures that prevent the reduction of inputs to these facilities. There remain concerns that easy availability of EfW management routes could reduce the pressures for waste to be managed by recycling and other methods further up the waste hierarchy. The Environmental Services Association has produced a document which seeks to address some of these issues<sup>2</sup>.

There is limited understanding of the extent to which operational plants will be taken off-line in coming years. The North London Heat and Power project is planned to replace the aging facility at Edmonton, and other infrastructure built in London may be nearing the end of its life within the next ten years. However it may also be possible to refurbish these plants in the short-term.

<sup>2</sup> [http://www.esauk.org/application/files/2416/1548/0962/22513\\_ESA\\_FAQs\\_March\\_2021\\_A4\\_SCREEN.pdf](http://www.esauk.org/application/files/2416/1548/0962/22513_ESA_FAQs_March_2021_A4_SCREEN.pdf)

### 3 Recycling rates and targets

The Resources and Waste Strategy for England identifies five strategic ambitions:

1. To work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025;
2. To work towards eliminating food waste to landfill by 2030;
3. To eliminate avoidable plastic waste over the lifetime of the 25 Year Environment Plan;
4. To double resource productivity by 2050; and
5. To eliminate avoidable waste of all kinds by 2050.

In 2000/01, only 12% of all LACW was recycled or composted in England, compared to 42.7% in 2018/19. The proportion of LACW sent to landfill has fallen from 79.0% to 10.8% over the same period. The official England 'waste from households' recycling rate was 45.5 per cent in 2019, up 0.9 percentage points from 44.7 per cent in 2018.

The Waste Management Plan for England<sup>3</sup> provides that recycling rates for waste management plans must include the measures to be taken so that, by 2035 the preparation for re-use and the recycling of municipal waste<sup>4</sup> is increased to a minimum of 65% by weight. The London Plan aspires to reach this target by 2030.

Landfill or incineration without energy recovery should usually be the last resort for waste, particularly biodegradable waste. The landfill tax is one of the key drivers to divert waste from landfill to achieve the 2020 target of no more than 10.161 million tonnes of biodegradable municipal waste to landfill and the 2035 target of no more than 10% of municipal waste to landfill.

### 4 Scope of the Report

#### 4.1 Capacity of Waste Management Facilities

This report examines the non-hazardous residual waste treatment capacity in the Wider South East of England. This focuses on landfill and thermal treatment facilities (EfW). The main MBT (mechanical and biological treatment) facilities in the study area have also been taken into account on the basis that they reduce the total amount of residual waste by 30%. This figure is an average calculated from discussions with the operators of these sites and publicly available data.

The identity and annual throughput of these treatment facilities has been obtained from Environment Agency sources and planning permissions granted by the relevant Waste Planning Authorities. It should be noted that the capacity of some facilities could therefore be greater than the figure currently identified in their throughput. An example of this is the EfW at Great Blakenham in Suffolk which obtained permission to increase its operational capacity from 269,000 tonnes per annum to 295,000 tonnes per annum in 2020<sup>5</sup>.

Other waste management facilities are far more numerous and difficult to assess and have not been analysed here, since they are part of the system of recycling and processing waste and the tonnages treated at such facilities is taken into account in the quantity of waste recycled.

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<sup>3</sup> <https://www.gov.uk/government/publications/waste-management-plan-for-england-2021>

<sup>4</sup> The definition of municipal waste as described in the Landfill Directive includes both household waste and that from other sources which is similar in nature and composition, which will include a significant proportion of waste generated by businesses and not collected by Local Authorities.

<sup>5</sup> <http://suffolk.planning-register.co.uk/Planning/Display?applicationNumber=SCC%2F0059%2F19MSART27>

The categorisation of these other facilities includes treatment and transfer facilities and the following categories have been used, taken from the Waste Data Interrogator:

- Landfill
- Disposal in or on land
- Incineration
- Treatment
- Processing
- Metal Recycling
- Transfer
- Mobile Plant
- Storage

The capacity of waste management facilities is also difficult to assess definitively, and has been assessed by examining the throughput of waste for each facility in the year 2019 (taken from the Waste Data Interrogator<sup>6</sup> as a proxy for capacity) as well as the capacity in the planning permission for the facility.

## 4.2 Waste Arisings

Waste arisings need to be assessed from a number of sources. Only non-hazardous waste arisings are considered here, so this report does not consider inert waste arisings which predominantly arise from construction and demolition activity, or separately identified hazardous wastes. Data for arisings of LACW have been taken from the Waste Local Plans of each Waste Planning Authority (WPA) and checked against Defra's most recent data<sup>7</sup>. Data for Commercial and Industrial (C&I) waste arisings has been obtained from each of the relevant WPA's local plan or their Annual Monitoring Report. The source of these figures is a calculation made by each WPA derived from Defra's assessment of C&I waste arisings taking into account the size of the economy in each area and projections of its growth. The baseline data for this waste stream is not as strong as that for LACW since the source of the information is survey data and extrapolations from this.

The estimate for C&I waste arisings for 2018 is from Defra who give a figure of 37.2 million tonnes for England. More information on how this figure is calculated can be found at the following sources:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/918270/UK\\_Statistics\\_on\\_Waste\\_statistical\\_notice\\_March\\_2020\\_accessible\\_FINAL\\_updated\\_size\\_12.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918270/UK_Statistics_on_Waste_statistical_notice_March_2020_accessible_FINAL_updated_size_12.pdf)

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/873328/Commercial\\_and\\_Industrial\\_Waste\\_Arisings\\_Methodology\\_Revisions\\_Oct\\_2018\\_contact\\_details\\_update\\_v0.2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873328/Commercial_and_Industrial_Waste_Arisings_Methodology_Revisions_Oct_2018_contact_details_update_v0.2.pdf)

A further element of uncertainty has been introduced with the proposals for the Oxford-Cambridge Arc<sup>8</sup> in the Wider South East. This is a proposal for strategic growth incorporating additional

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<sup>6</sup> The Waste Data Interrogator is publicly available at <https://data.gov.uk/dataset/d409b2ba-796c-4436-82c7-eb1831a9ef25/2019-waste-data-interrogator>

<sup>7</sup> <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>

<sup>8</sup> <https://www.gov.uk/government/publications/planning-for-sustainable-growth-in-the-oxford-cambridge-arc-spatial-framework/planning-for-sustainable-growth-in-the-oxford-cambridge-arc-an-introduction-to-the-spatial-framework>



businesses and in the order of one million new homes by 2050. If these proposals are implemented, additional waste management infrastructure will be needed accordingly.

### 4.3 London policy context

The London Plan provides a key part of the policy framework for waste planning in London and waste plans and policies in this area should be in general conformity with the London Plan.

The London Plan states that London should manage as much of its waste within its boundaries as practicable, aiming to achieve waste net self-sufficiency by 2026 in all waste streams except for excavation waste. To meet this aim, the London Plan apportions an amount of LACW and C&I waste to each Borough and requires boroughs to allocate sufficient land and identify waste management facilities to provide capacity to manage the apportioned tonnages of waste.

The London Plan incorporates targets set out in the Mayor's Environment Strategy, including a London-wide target of 65% municipal (household and business) waste by 2030. This breaks down as 50% of LACW by 2025 and 75% of C&I by 2030.

Recent figures<sup>9</sup> show that London has a household waste recycling rate of 33%, a business waste recycling rate of 48% and a municipal waste recycling rate of 41%.

RDF from East London's MBT facilities are mainly exported to Europe and the RDF from Southwark's MBT facility is sent to the South East London Combined Heat and Power Plant (SELCHP) energy recovery plant.

The other uncertain factor is the extent to which the recycling target for Municipal Waste of 65% will be met. The pressures on local authority budgets may restrict the innovation required to exceed current recycling rates and reach this target.

## 5 Non-Hazardous Waste Management Capacity

This section describes the non-hazardous waste management capacity in the Wider South East of England.

Facilities for managing waste at landfill, disposal onto land, incineration and MBT processing all contribute to taking waste to its final fate. The capacity for transfer, storage and mobile plant are generally intermediate fates where material then needs to undergo further treatment. However, some form of recycling and reuse often takes place at transfer stations, and some material losses take place at recycling facilities where a percentage of material then needs to be disposed of at another facility such as incineration or landfill. While the reporting of this data remains patchy, it is estimated that the average reject rate for MRFs in England is approximately 10%. This means that the quantities of residual waste that require management described in the section below are likely to be underestimates.

There is an on-going debate about the role of MBT facilities, which produce RDF which then needs to be further treated usually at EfW plants. They reduce the volume and weight of material handled, through extraction of water and recyclable materials. The material that is then sent for recycling will be counted in the recycling statistics achieved within each Waste Planning Authority area.

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<sup>9</sup> [London Environment Strategy](#) (May 2018)

Some WPAs including the London Boroughs, include MBT capacity in their total residual waste treatment capacity. The main facilities for production of RDF and SRF in the Wider South East are listed here, but not included in the total available residual waste management capacity.

## 5.1 Non-Hazardous Landfill

The data on remaining non-hazardous landfill capacity has been obtained from the Environment Agency which collates information supplied by operators. The information is necessarily approximate and is subject to continuous change. These figures therefore provide a snapshot of the picture at a point in time and are based on the landfill sites given in Appendix 1. The data is largely taken from the Environment Agency's regular report on Remaining Landfill Capacity and the end of 2019.

The role of landfill for disposing of waste has reduced significantly in recent years with many non-hazardous landfill sites being filled more slowly than in earlier decades and sometimes being restored to lower levels than originally anticipated. Landfill is currently regarded as the least desirable management route for waste and the National Planning Policy for Waste (2014) requires Waste Planning Authorities to drive waste management up the waste hierarchy. The Resources and Waste Strategy for England aims to eliminate the sending of food waste to landfill by 2030 and to reduce the amount of municipal waste sent to landfill to 10% or less by 2035. It is possible that the use of landfill for non-hazardous waste will be all but eliminated by that time.

**Table 1 Non-Hazardous Landfill Capacity**

| Waste Planning Authority Area        | Capacity (cubic metres) |
|--------------------------------------|-------------------------|
| Cambridgeshire and Peterborough      | 8,148,000               |
| Essex and Southend-on-Sea            | 2,171,000               |
| Norfolk                              | 5,090,000               |
| Suffolk                              | 4,400,000               |
| Thurrock                             | 5,200,000               |
| <b>Total for the East of England</b> | <b>25,009,000</b>       |

| Waste Planning Authority Area | Capacity (cubic metres) |
|-------------------------------|-------------------------|
| Havering                      | 1,142,042               |
| Sutton                        | 10,000                  |
| <b>Total for London</b>       | <b>1,152,042</b>        |

| Waste Planning Authority Area | Capacity (cubic metres) |
|-------------------------------|-------------------------|
| Buckinghamshire total         | 28,101,363              |
| Hampshire total               | 780,880                 |
| Kent Total                    | 1,746,688               |
| Oxfordshire total             | 3,801,464               |
| Surrey Total                  | 3,711,635               |
| <b>South East Total</b>       | <b>38,142,030</b>       |

Total Non-Hazardous Landfill capacity in the Wider South East: **66,327,072 cubic metres**

## 5.2 Residual Waste Treatment Capacity

The residual waste treatment facilities that are considered here comprise EfW facilities. The table below identifies the facilities in the Wider South East that process non-hazardous wastes. The majority of these are operational but also included are facilities that are under construction, or are considered certain to be delivered within the next three years.

**Table 2 Residual Waste Treatment Facilities in the Wider South East**

| <b>East of England</b>                        | <b>Capacity (tonnes pa)</b> |
|---|-----------------------------|
| Peterborough (operational)                    | 85,000                      |
| Suffolk (operational)                         | 295,000                     |
| Goosey Lodge (Bedford Borough)                | 255,000                     |
| Central Bedfordshire (under construction)     | 545,000                     |
| Essex (Rivenhall - (with planning permission) | 595,000                     |
| Tilbury Green Power                           | 450,000                     |
| <b>Total in the East of England</b>           | <b>2,225,000</b>            |

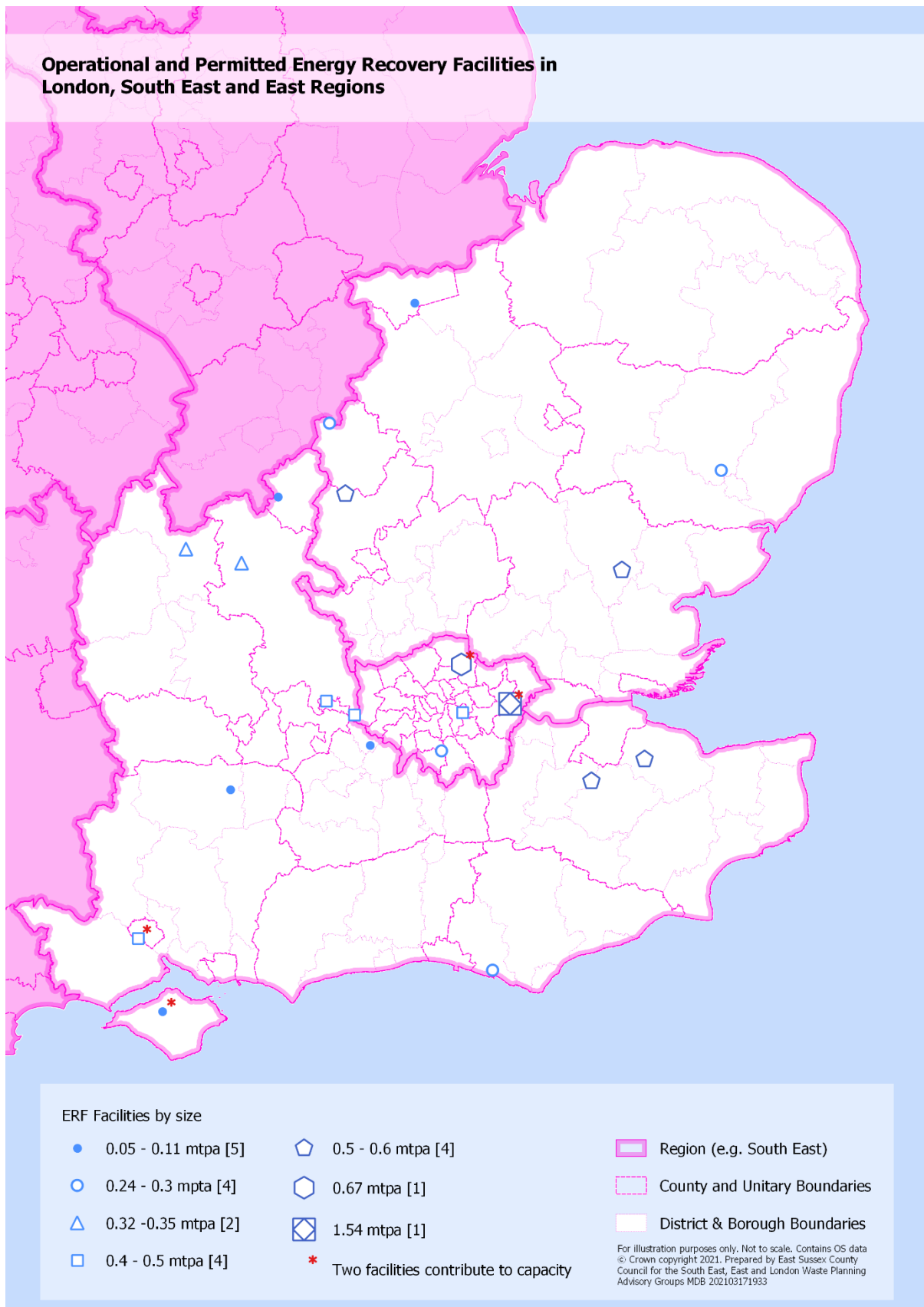
| <b>South East of England</b>                                    | <b>Capacity (tonnes pa)</b> |
|---|-----------------------------|
| Newhaven EfW (East Sussex) (operational)                        | 242,000                     |
| Greatmoor EfW (Buckinghamshire) (operational)                   | 345,000                     |
| Forest Road ERF (Isle of Wight) (under construction)            | 44,000                      |
| Lakeside EfW at Colnbrook (Slough) (operational)                | 460,000                     |
| Portsmouth ERF (Hampshire) (operational)                        | 210,000                     |
| Chineham ERF (Hampshire) (operational)                          | 110,000                     |
| Marchwood ERF (Hampshire) (operational)                         | 220,000                     |
| Allington (Kent) (operational)                                  | 500,000                     |
| Kemsley K3 (Kent) (under construction)                          | 550,000                     |
| Charlton Lane Eco Park (Surrey) (commissioning)                 | 55,460                      |
| Isle of Wight Resource Recovery Facility (operational)          | 60,000                      |
| Oxfordshire Ardley ERF  | 326,000                     |
| Milton Keynes Waste Recovery Park (Milton Keynes) (operational) | 93,600                      |
| Slough Heat & Power   | 438,000                     |
| <b>Total in the South East of England</b>                       | <b>3,654,060</b>            |

| <b>London</b>   | <b>Capacity (tpa)</b> |
|---|-----------------------|
| Riverside Resource Recovery, Bexley                                 | 741,147               |
| Edmonton EfW Facility, Enfield                                      | 495,178               |
| South East London Combined Heat and Power (SELCHP) Lewisham         | 439,083               |
| Beddington Energy Recovery Facility Sutton                          | 276,877               |
| Cory Riverside Energy (consented) Bexley                            | 800,000               |
| North London Heat and Power (additional consented capacity) Enfield | 175,000               |
| <b>Total in London</b>  | <b>2,927,285</b>      |

**Total residual waste treatment capacity in the Wider South East**

**8,806,345**

**Figure 3 Operational and Permitted Energy Recovery Facilities in London, South East and East Regions**



**Table 3 MBT Capacity (tonnes)**

| Annual throughput  | Annual throughput (2019) | Treatment capacity (30%) |
|--|--------------------------|--------------------------|
| Jenkins Lane Waste Management Facility (Newham)            | 189,637                  | 56,891                   |
| Frog Island Waste Management Facility (Havering)           | 162,338                  | 48,701                   |
| Southwark Integrated Waste Management Facility (Southwark) | 85,000                   | 25,500                   |
| <b>Total</b>   | <b>436,975</b>           | <b>131,093</b>           |

| MBT Facilities outside London | Annual throughput (2019) | Treatment capacity (30%) |
|-------------------------------|--------------------------|--------------------------|
| Amey (Cambridgeshire)         | 200,000                  | 60,000                   |
| Courtauld Rd (Essex)          | 417,000                  | 125,100                  |
| Brookhurst Wood (West Sussex) | 130,400                  | 39,120                   |
| <b>Total</b>                  | <b>747,400</b>           | <b>224,220</b>           |

Source: Operational data supplied by ELWA, Environment Agency and [Southeast London joint waste planning technical paper](#) (December 2019)

Total residual waste treatment capacity from MBT: **355,313 tonnes pa**

In addition, there are a significant number of composting and anaerobic digestion facilities in the Wider South East that are not considered here.

## 6 Comparison with Waste Arisings

The waste arising in each WPA Area has been taken from Waste Plans, the London Plan and Annual Monitoring Reports. Some of these forecasts may be a little out of date and many caveats need to be applied to waste arising forecasts, especially forecasts of C&I waste where the data for existing arisings is weak.

In addition, the economy is likely to enter a recession following the Covid crisis and C&I waste arisings will be significantly lower than anticipated in any waste forecasts. In 2020 household waste arisings have increased by between 20% and 30% in most areas, but this will not make up for the large reduction in commercial arisings that has occurred in the first half of 2020. The arisings in the table below are therefore likely to be over-estimates.

The table below summarises the non-hazardous waste arisings in each WPA area and shows how much residual waste will need to be managed if recycling and composting rates are achieved ranging from 50% to 65%.

**Table 4 Quantities of non-hazardous waste arising (tonnes)**

| Waste arisings in 2020/21                      | LACW              | C&I               | Total Non-hazardous waste arisings | Residual waste to be managed after recycling rate of |                   |                   |                  |
|--|-------------------|-------------------|------------------------------------|--|-------------------|-------------------|------------------|
|  |                   |                   |                                    | 50%  | 55%               | 60%               | 65%              |
| Bedfordshire Authorities                       | 340,000           | 527,000           | <b>867,000</b>                     | 433,500  | 390,150           | 346,800           | 303,450          |
| Cambridgeshire                                 | 354,000           | 603,000           | <b>957,000</b>                     | 478,500  | 430,650           | 382,800           | 334,950          |
| Essex & Southend                               | 737,000           | 940,000           | <b>1,677,000</b>                   | 838,500  | 754,650           | 670,800           | 586,950          |
| Hertfordshire                                  | 556,000           | 1,066,000         | <b>1,622,000</b>                   | 811,000  | 729,900           | 648,800           | 567,700          |
| Norfolk  | 430,000           | 1,141,600         | <b>1,730,000</b>                   | 865,000  | 778,500           | 692,000           | 605,500          |
| Peterborough                                   | 97,000            | 201,000           | <b>298,000</b>                     | 149,000  | 134,100           | 119,200           | 104,300          |
| Suffolk  | 401,000           | 711,000           | <b>1,112,000</b>                   | 556,000  | 500,400           | 444,800           | 389,200          |
| Thurrock                                       | 81,000            | 88,000            | <b>169,000</b>                     | 84,500   | 76,050            | 67,600            | 59,150           |
| <b>Total for East of England</b>               | <b>2,996,000</b>  | <b>5,436,000</b>  | <b>8,432,000</b>                   | <b>4,216,000</b>                                     | <b>3,794,400</b>  | <b>3,372,800</b>  | <b>2,951,200</b> |
| Buckinghamshire                                | 279,000           | 582,000           | 861,000                            | 430,500  | 387,450           | 344,400           | 301,350          |
| Central and Eastern Berkshire                  | 262,817           | 508,920           | 771,737                            | 385,869  | 347,282           | 308,695           | 270,108          |
| East Sussex (inc. B&H & SDNP)                  | 385,000           | 516,420           | 901,420                            | 450,710  | 405,639           | 360,568           | 315,497          |
| Hampshire                                      | 809,974           | 1,257,500         | 2,067,474                          | 1,033,737  | 930,363           | 826,990           | 723,616          |
| Isle of Wight                                  | 45,946            | 63,530            | 109,476                            | 54,738   | 49,264            | 43,790            | 38,317           |
| Kent   | 721,188           | 1,274,080         | 1,995,268                          | 997,634  | 897,871           | 98,107            | 698,344          |
| Medway   | 129,639           | 206,125           | 335,764                            | 167,882  | 151,094           | 134,306           | 117,517          |
| Milton Keynes                                  | 147,000           | 34,000            | 181,000                            | 90,500   | 81,450            | 72,400            | 63,350           |
| Oxfordshire                                    | 343,000           | 542,000           | 885,000                            | 442,500  | 398,250           | 354,000           | 309,750          |
| Slough   | 59,472            | 381,000           | 440,472                            | 220,236  | 198,212           | 176,189           | 154,165          |
| Surrey   | 540,000           | 744,000           | 1,284,000                          | 642,000  | 577,800           | 513,600           | 449,400          |
| West Berkshire                                 | 81,483            | 174,090           | 255,573                            | 127,787  | 115,008           | 102,229           | 89,451           |
| West Sussex (inc. SDNP)                        | 435,000           | 456,000           | 891,000                            | 445,500  | 400,950           | 356,400           | 311,850          |
| <b>Total South East</b>                        | <b>4,239,519</b>  | <b>6,739,665</b>  | <b>10,979,184</b>                  | <b>5,489,592</b>                                     | <b>4,940,633</b>  | <b>4,391,674</b>  | <b>3,842,714</b> |
| <b>All London</b>                              | <b>4,026,000</b>  | <b>4,191,000</b>  | <b>8,217,000</b>                   | <b>4,108,500</b>                                     | <b>3,697,650</b>  | <b>3,286,800</b>  | <b>2,875,950</b> |
| <b>Total Arisings for the Wider South East</b> | <b>11,261,519</b> | <b>16,366,665</b> | <b>27,628,184</b>                  | <b>13,814,092</b>                                    | <b>12,432,683</b> | <b>11,051,274</b> | <b>9,669,864</b> |

## 7 Summary and Conclusions

If the recycling target of 65% is achieved then, without relying on available landfill, there will be a shortfall of capacity for residual treatment of just under one million tonnes per annum. This may be significantly lower if the arisings are an over-estimate as anticipated in section 6.

In the interim before that recycling rate is reached or if it is not reached at all, the gap is likely to be more.

**Table 5 Total Forecast Non-Hazardous Residual Waste Capacity Gap**

| Recycling rate  | 50%              | 55%              | 60%              | 65%            |
|---|------------------|------------------|------------------|----------------|
| Total residual waste                                  | 13,814,092       | 12,432,683       | 11,051,274       | 9,669,864      |
| Residual treatment capacity                           | 8,844,885        | 8,844,885        | 8,844,885        | 8,844,885      |
| <b>Residual waste treatment capacity gap (tonnes)</b> | <b>5,007,747</b> | <b>3,626,338</b> | <b>2,244,929</b> | <b>863,519</b> |

Until existing planning permissions start construction, or new facilities come forward, and recycling rates increase, the Wider South East of England is therefore likely to remain at least partially dependent on facilities outside its area as well as facilities abroad. A key example of waste that is sent outside the Wider South East is the waste sent from West London to an energy from waste facility in South Gloucestershire amounting to approximately 300,000 tonnes per annum.

It should be noted that this report does not include any forecasts for population or economic growth, both of which could cause an increase in the quantity of waste arising. It should also be noted that there are significant challenges in achieving the target of 65% recycling and composting of non-hazardous waste: whilst this level has been achieved in Wales, changes on collection and waste management systems will be required to achieve this level throughout the Wider South East of England for both Local Authority Collected Waste and Commercial and Industrial waste.

Notwithstanding the approach of the Study, it is recognised that London Boroughs and other WPAs may count RDF manufacture e.g. by MBT as residual waste management capacity alongside EfW capacity when establishing 'other recovery' requirements in their Waste Local Plans.

## Appendix 1 – Details of Non-hazardous Landfill Sites

### Cambridgeshire and Peterborough

| Site Name  | Capacity (cubic metres) |
|--|-------------------------|
| Buckden Landfill Site                            | 1,998,000               |
| Grunty Fen Landfill Site, Ely                    | 129,000                 |
| March Landfill Site                              | 30,000                  |
| Milton Landfill Site                             | 132,000                 |
| Warboys Landfill Site                            | 0                       |
| Witcham Meadlands Landfill, Mepal                | 1,042,000               |
| Ely Road Landfill Site, Waterbeach               | 2,309,000               |
| Eye Quarry Landfill                              | 700,000                 |
| Thornhaugh Quarry I Landfill Site                | 1,140,000               |
| Eye North Eastern Landfill                       | 518,000                 |
| Eye Quarry Landfill                              | 150,000                 |
| <b>Total for Cambridgeshire and Peterborough</b> | <b>8,148,000</b>        |

### Essex and Southend-on-Sea

| Site Name   | Non-haz capacity (cubic metres) |
|---|---------------------------------|
| Martell's Quarry, Slough Lane, Ardleigh, Colchester                   | 56,000                          |
| Bellhouse Landfill, Warren Lane, Stanway, Colchester                  | 2,000,000                       |
| Barling Magna Landfill, Barling Marsh, Barling Magna, Southend-on-Sea | 100,000                         |
| Pitsea Landfill, Pitsea Hall Lane, Pitsea, Basildon                   | 15,000                          |
| <b>Total for Essex and Southend-on-Sea</b>                            | <b>2,171,000</b>                |

### Norfolk

| Site Name                | Capacity (cubic metres) |
|--------------------------|-------------------------|
| Blackborough End         | 4,000,000               |
| Feltwell                 | 1,090,000               |
| <b>Total for Norfolk</b> | <b>5,090,000</b>        |

### Suffolk

| Site Name                | Capacity (cubic metres) |
|--------------------------|-------------------------|
| Masons Landfill          | 3,800,000*              |
| Folly Farm Landfill      | 600,000                 |
| <b>Total for Suffolk</b> | <b>4,400,000</b>        |

\*Note that the current planning permission is for restoration of this site by October 2022



## Thurrock

| Site Name                 | Remaining Capacity (cubic metres) |
|---------------------------|-----------------------------------|
| South Ockendon            | 4,500,000                         |
| Rainham Landfill          | 1,700,000                         |
| <b>Total for Thurrock</b> | <b>5,200,000</b>                  |

## Non-Hazardous Landfill Capacity in London

| Facility name                      | Borough  | Capacity (cubic metres) |
|------------------------------------|----------|-------------------------|
| Rainham Landfill                   | Havering | 1,142,042               |
| Beddington Farmlands Landfill Site | Sutton   | 10,000                  |
| <b>Total</b>                       |          | <b>1,152,042</b>        |

## Non-hazardous Landfill Capacity in the South-East

| Facility Name                          | Planning Sub Region | Remaining Capacity end 2019 (cubic metres) |
|--|---------------------|--|
| Springfield Farm Landfill              | Buckinghamshire     | 9,317,863                                  |
| Bletchley Landfill Site                | Buckinghamshire     | 10,409,626**                               |
| Calvert Landfill Site pit 6            | Buckinghamshire     | 5,943,903                                  |
| Calvert Landfill Site                  | Buckinghamshire     | 2,186,371                                  |
| Land at Meadhams Farm Brickworks       | Buckinghamshire     | 243,600                                    |
| Blue Haze Landfill                     | Hampshire           | 780,880                                    |
| Greatness Quarry                       | Kent                | 11,855                                     |
| Shelford Landfill Site                 | Kent                | 1,734,833                                  |
| Sutton Courtenay                       | Oxfordshire         | 2,505,012                                  |
| Sutton Courtenay Landfill - Phase 3    | Oxfordshire         | 721,583                                    |
| Dix Pit Landfill Site                  | Oxfordshire         | 137,687                                    |
| Finmere Quarry Landfill                | Oxfordshire         | 437,182                                    |
| Redhill Landfill (North East Quadrant) | Surrey              | 3,661,509                                  |
| <b>Total</b>                           |                     | <b>38,091,904</b>                          |

\*\*Note that the current planning permission is for imports to this site to cease by February 2022

## Appendix 2 – Membership of regional waste planning advisory groups in the Wider South East of England

There are representatives of the following Waste Planning Authorities on the respective waste planning advisory groups. It should be noted that these representatives are unable to bind their authorities to any view or position and their participation is advisory.

### East of England Waste Technical Advisory Body

- Cambridgeshire County Council
- Peterborough City Council
- Suffolk County Council
- Norfolk County Council
- Essex County Council
- Thurrock Council
- Southend-on-sea Borough Council
- Hertfordshire County Council
- Central Bedfordshire Council
- Bedford Borough Council and
- Luton Borough Council

Contact details: Deborah Sacks [deborah@sacksconsulting.co.uk](mailto:deborah@sacksconsulting.co.uk)

### South East Waste Planning Advisory Group

- Buckinghamshire County Council
- East Sussex County Council
- Hampshire County Council
- Kent County Council
- Oxfordshire County Council
- Surrey County Council
- West Sussex County Council
- Bracknell Forest Borough Council
- Brighton and Hove Council
- Isle of Wight Council
- Medway Borough Council
- Milton Keynes Council
- Portsmouth City Council
- Reading Borough Council
- Slough Borough Council
- Southampton City Council
- West Berkshire District Council

Contact details: Ian Blake [ian.blake@cpresources.co.uk](mailto:ian.blake@cpresources.co.uk)

### **London Waste Planning Forum**

- a) All waste planning authorities in London - WPAs in waste planning consortia may choose to be represented by one of the boroughs involved
- b) The GLA, LWARB, London Councils and other London organisations dealing with waste
- c) Environment Agency
- d) Private sector involved with waste planning in London to be coordinated through ESA
- e) Community and voluntary sector organisations involved with waste planning in London
- f) Representatives from neighbouring regional waste planning fora (East of England and South East England)
- g) Other government and non-governmental organisations including waste industry trade bodies and professional bodies as agreed from time to time by the LWPF

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