



# Essex Climate Action Commission: Waste Management

## Technical Annex

# Contents

<b>1. Context</b> .....	<b>3</b>
<b>2. Legislation and Policy</b> .....	<b>5</b>
2.1 Amendments to the Landfilling Directive .....	6
2.2 Amendments to the Waste Framework Directive .....	7
2.3 Amendments to the Packaging Waste Directive .....	7
2.4 Amendments to the directives on end-of-life vehicles; batteries and accumulators; and waste electrical and electronic equipment.....	7
<b>3. National Policy Direction</b> .....	<b>8</b>
<b>4. Essex Joint Municipal Waste Management Strategy</b> .....	<b>10</b>
<b>5. Local Authority Collected Waste Management in Essex</b> .....	<b>11</b>
5.1 Waste Minimisation & Reuse .....	11
5.2 Recycling & Composting .....	11
5.3 Residual Waste Treatment and Disposal .....	13
5.4 Performance .....	13
<b>Acknowledgements</b> .....	<b>14</b>
<b>Glossary</b> .....	<b>14</b>

# Waste Management

## 1. Context

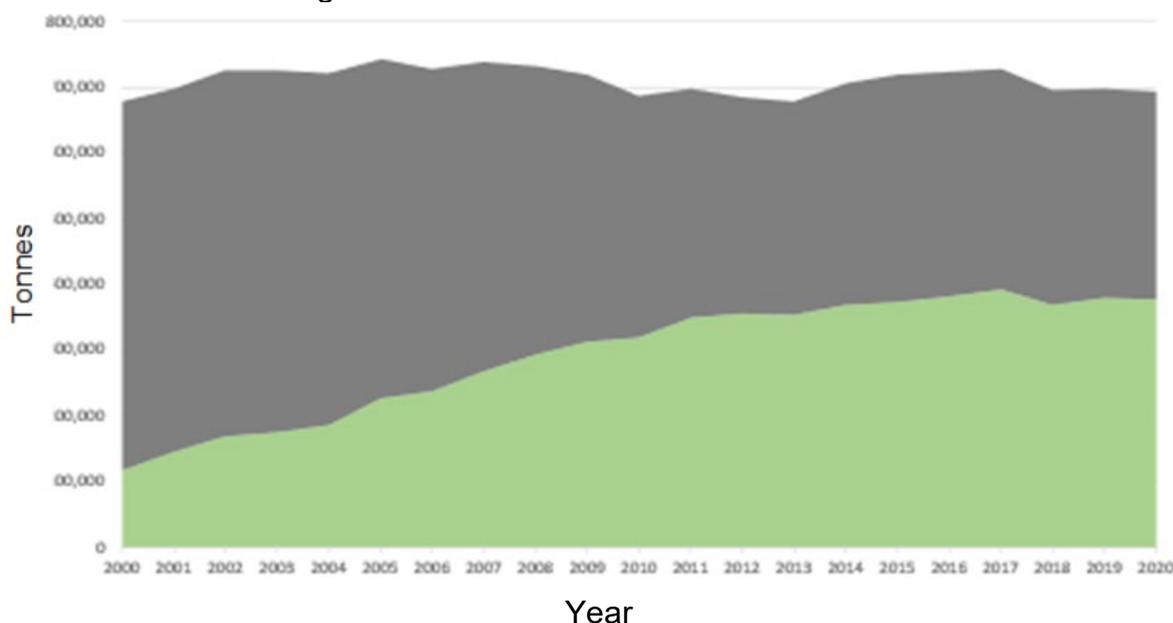
Waste can be defined as ‘any substance or object which the holder discards or intends or is required to discard’ (Article 3(1) EU Waste Framework Directive). Waste is generated by every facet of our society and is an integral element of modern life. Its careful and appropriate management is essential in minimising adverse environmental impacts.

Waste generated in Essex requiring treatment and disposal comes from a variety of sources and will require differing treatment approaches depending on its composition.

Essex County Council and its twelve-constituent district, city and borough councils manages approximately 700,000 tonnes of waste every year. This waste is known as Local Authority Collected Waste (LACW) and mainly comprises household waste with a small quantity of business waste.

Over the last 20 years, despite the Essex population rising, the total amount of LACW generated in Essex has remained broadly stable. This achievement has been due to the adoption of differing behaviours by consumers to reduce the waste they produce, and by many manufacturers and retailers who have redesigned their products and services to use less raw materials, last longer and therefore producing less waste. On average, each Essex resident produces about half a tonne (500kg) of LACW every year.

Figure 1: Council Collected Waste in Essex



Source: Essex County Council

In the last two decades the main observed shift with LACW is the proportion of waste recycled or composted rather than disposed of to landfill or incinerated. In Essex, this has risen from less than 20% in 2000 to over 50%. This has been achieved through a combination of more extensive and accessible recycling schemes collecting a greater range of materials and increasing participation in these services by residents.

The twelve-constituent district, city and borough councils are the Waste Collection Authorities (WCA) for Essex and are responsible of the collection of LACW that is presented at the kerbside by householders and those businesses that request a collection, the provision of recycling collections and street cleansing.

Essex County Council (ECC) fulfils the role of Waste Disposal Authority (WDA) for Essex and must arrange for the disposal of all LACW collected by the WCAs and the recycling and composting of the separately collected LACW where requested. ECC as the WDA also has a duty to provide places for residents in the area to deposit their household waste free of charge. In Essex we call these Recycling Centres for Household Waste (RCHW). There are 21 such sites.

In addition to LACW, there are significant quantities of Commercial and Industrial (C&I) Waste generated in Essex each year. C&I waste is primarily generated by business, industry and from agriculture. This waste is not handled by the council but managed by private sector waste companies in a system that is regulated by the Environment Agency. Data on C&I waste at a county level is less complete than LACW. However, it is estimated that C&I waste makes up around 80% of all waste generated or requiring treatment in Essex ([Essex and Southend-on-Sea Waste Local Plan. Adopted July 2017](#)). This equates to around 2.8 million tonnes per annum, of this over 50% is generated through construction, demolition, and excavation activity.

## 2. Legislation and Policy

A circular economy is an economic system aimed at eliminating waste and encouraging the continual use of resources.

Figure 2: The circular economy system



Source: Ellen Macarthur Foundation

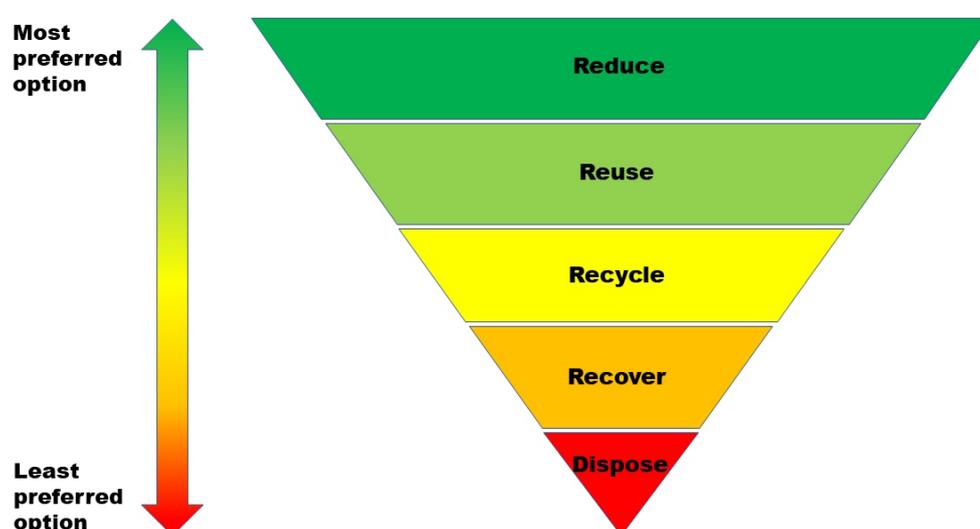
The European Union recognises that a move to a more circular economy will boost competitiveness, modernise the economy and industry, create jobs, protect the environment, and generate sustainable growth.

The circular economy is at the heart of much recent waste management legislation and policy in Europe. Arguably the most significant development in recent years has been the implementation of the EU Circular Economy Package (CEP). The package includes four directives that were adopted by the European Parliament and by the EU

Council on 22 May 2018. The directives entered into force on 4 July 2018 and the UK [Government transposed this into UK law in 2020](#)

The overall goal of the CEP is to use resources more efficiently and improve how we manage waste. This will contribute to the protection, preservation, and improvement of the quality of the environment. More specifically, the directives aim to implement the concept of the “waste hierarchy”. The waste hierarchy sets a priority order for all waste prevention and management legislation and policy which should make any disposal of waste a solution of last resort:

Figure 3: The Waste Hierarchy



Application of the waste hierarchy principles should promote a shift to a more sustainable future.

## 2.1 Amendments to the Landfilling Directive

Directive (EU) 2018/850 requires Member States to significantly reduce waste disposal by landfilling. This will prevent detrimental consequences for human health and the environment and ensure that economically valuable waste materials are recovered through proper waste management in line with the waste hierarchy. Member States will be required to ensure that, by 2030, waste suitable for recycling or other recovery, in particular contained in municipal waste (local authority collected waste and similar types of waste), will not be permitted to be disposed of to landfill. Use of landfills should remain exceptional rather than the norm. Furthermore, the Member States must take the necessary measures to ensure that by 2035, the amount

of municipal waste disposed of in landfills is reduced to 10% or less of the total amount of municipal waste generated.

## **2.2 Amendments to the Waste Framework Directive**

Directive (EU) 2018/851 requires Member States to improve the sustainability of waste management systems and ensure natural resources are used efficiently.

Member States must implement measures to ensure minimum recycling rates for municipal waste, achieving 55% by weight by 2025, 60% by 2030, and 65% by 2035.

## **2.3 Amendments to the Packaging Waste Directive**

Directive (EU) 2018/852 aims to increase packaging waste recycling. In particular, Member States must:

- Implement measures in order to prevent the generation of packaging waste and to minimise the environmental impact of packaging.
- Take measures to encourage an increase in the share of reusable packaging placed on the market and of systems to reuse packaging in an environmentally sound manner.
- Meet defined recycling targets for packaging
- Ensure that producers take greater responsibility for the treatment and disposal of all packaging they place on the market

## **2.4 Amendments to the directives on end-of-life vehicles; batteries and accumulators; and waste electrical and electronic equipment**

Directive (EU) 2018/849 primarily establishes monitoring and reporting requirements for Member States regarding the reuse and recovery goals for end-of-life vehicles and collection targets for waste batteries, accumulators, and electrical and electronic equipment.

### 3. National Policy Direction

The national policy response to the CEP “Our Waste, Our Resources: A Strategy for England” ([HM Government - Our Waste Our Resources: A Strategy for England](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf)) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/765914/resources-waste-strategy-dec-2018.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf) was published in December 2018. The national strategy sets out details of a number of practical measures to implement the CEP. Whilst these will be subject to further consultation prior to any decision on final adoption they do provide a clear direction of travel for national policy, and include:

- Implementation of more accessible and extensive recycling schemes for households and businesses to increase the proportion of waste recycled and composted.
- Extended producer responsibility for packaging and products thereby placing greater responsibility on producers for the final disposal of their products.
- Implementation of a deposit return scheme to increase the collection of drinks containers for recycling.
- A commitment to a 65% municipal waste recycling rate by 2035.
- A limit of 10% municipal waste to landfill by 2035.
- A ban on separately collected waste going to landfill or incineration; and
- Restrictions on the materials that can be sent for landfill or incineration.

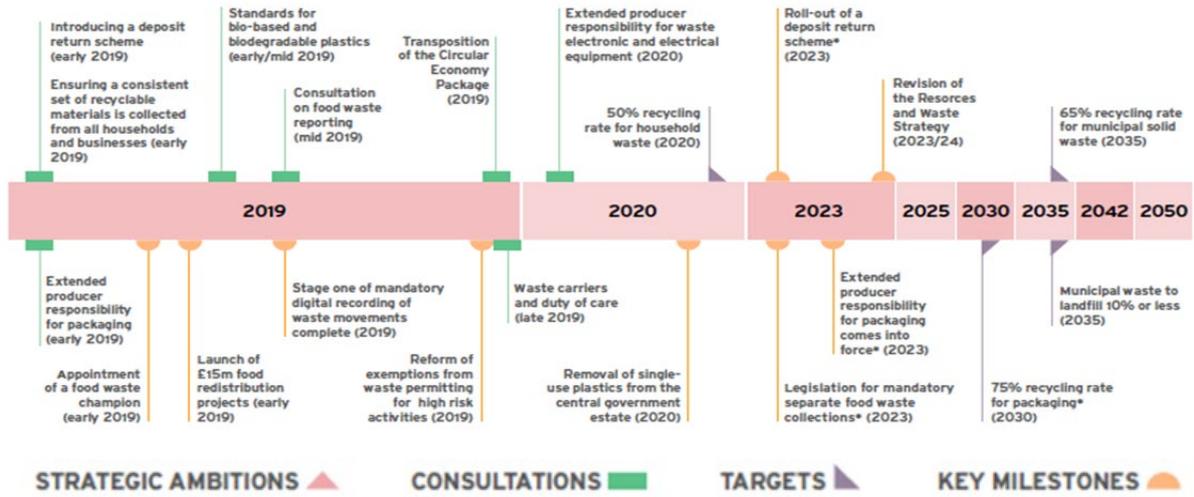
The key milestones to deliver the national strategy are detailed below.

#### Key Milestones

- Double resource productivity by 2050
- Eliminate avoidable waste of all kinds by 2050
- Eliminate avoidable plastic waste over the lifetime of the 25 Year Environment Plan
- Work towards eliminating food waste to landfill by 2030
- Work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025.

Although progress with some of these activities has been delayed by the Covid pandemic, the latest consultations indicate that it remains the Government intention to deliver key legislative changes with minimal delay via [The Environment Bill](#), which is expected to obtain Royal Assent during 2021, to ensure CEP commitments can be met.

Figure 4: Timeline of key milestones in waste management from 2019 – 2050



\*Subject to consultation

## 4. Essex Joint Municipal Waste Management Strategy

In 2008, Essex County Council and its twelve WCA partners developed the Essex [Joint Municipal Waste Management Strategy](#) (JMWMS).

The Partnership's proposed strategy for dealing with municipal waste during the period 2007 to 2032 can be summarised as follows:

- Essex Authorities will work hard to reduce the amount of waste produced in the first place and re-use more of the waste that is produced.
- Essex will achieve high levels of recycling, with an aspiration to collectively achieve a minimum 50% recycling of household waste by 2020, with an aspiration for 60%. This could be achieved through a combination of further improvement in the performance of recycling and composting kerbside collection schemes and the Recycling Centres for Household Waste, and the recovery of recyclable materials through new treatment plants.
- Essex favours composting technologies such as anaerobic digestion (AD) for source segregated organic wastes. AD is a form of biotreatment and produces a gas which can be used to generate 100% renewable electricity.
- Whilst we can work on reducing the amount of waste produced and recycling as much of it as possible, there will always be some waste that still needs to be disposed of. For this we propose to introduce new treatment plants using Mechanical Biological Treatment (MBT). MBT processes any 'black bag' waste and recovers further material for recycling. Part of the remaining material can either be manufactured into a fuel for energy production or can be sent to landfill.

The JMWMS has now reached the end of its effective life as it contains no firm targets beyond the year 2020. This now needs reviewing and new targets set.

## 5. Local Authority Collected Waste Management in Essex

The LACW waste collection, treatment and recycling services are provided by the WDA (ECC) and the WCAs (Borough, City & District Councils). Although there is a high degree of synergy between the services provided, there are also areas of overlap particularly in relation to recycling services.

### 5.1 Waste Minimisation & Reuse

Essex Councils undertake several activities to promote and encourage waste minimisation or reuse. These include:

- Advice and Campaigns: Joint campaigning and advisory activity with partners (local and national) to educate and encourage behaviour change. This is carried out via established council routes and a community-based volunteer network.
- Reuse Networks: Promotion and financial support provided to reuse networks and others operating in the Essex community encouraging reuse and waste minimisation.
- Reuse Services: The segregation of waste collected through kerbside bulky waste services or at the RCHW enable goods to be repurposed or reused.
- Cloth Nappies: financial incentive scheme to encourage use of reusable nappies, promotion and supporting community networks; and,
- Home composting: provision of subsidised, or free, home compost units to encourage home composting and prevent green waste entering the waste stream. This is supported by composting masterclasses and further on-line and direct support.

### 5.2 Recycling & Composting

These services are provided by the WDA, via the 21 RCHWs, and the WCA through kerbside recycling collections and recycling bring banks. The WDA and the WCA maintain a range of contracts with waste brokers or commercial re-processors for the material streams collected. The biowaste streams (green garden, food and mixed food and garden) are mainly reprocessed within Essex, or neighbouring areas via a combination of open windrow composting, anaerobic digestion, and in-vessel composting. Other material streams are generally processed out of county and in some cases overseas.

WDA: The RCHW provide residents with access to a facility for the disposal of any Household Waste, and limited quantities of Construction and Demolition waste generated in the home. Although the RCHW are designed for the collection of bulky waste (items that cannot be disposed of via the regular kerbside service) residents are permitted to bring normal refuse to the facilities.

The RCHW sites are unevenly distributed across the County. However, the vast majority of residents are within a 30-minute drive of a facility and most centres of population have a facility located within the boundary. Over half of the RCHW operate

7 days a week and take all waste types, while the remaining smaller sites are open for between 4 and 6 days a week and have limits on the types of waste and vehicles permitted.

The RCHWs handle approximately 140,000 tonnes of waste per year, of which approximately 56% is diverted from disposal (43% is recycled and 13% is composted).

WCA: operate all the kerbside collection services and a large number of recycling banks. The services operated will vary from area to area however in the main they meet the minimum standards currently being consulted on by Government.

The scope of kerbside collection recycling services provided by Essex WCA to kerbside properties is summarised below:

Figure 5: Kerbside collection recycling services provided by Essex WCA

Waste Type	WCA (Out of 12)	Note
Paper & Card	12	
Plastic	12	Not all WCA collect the full range of plastic containers/trays/film
Metal	12	
Glass	10	The remaining two only collect glass via bring banks
Food	12	Three mix food waste with garden waste
Green Garden	12	Three mix food waste with garden waste Five charge for the collection of garden waste

Although most core material are collected from the kerbside, the way these are collected varies. The majority (10 WCAs) operate full or partial commingling of recycling materials which impacts the collection receptacles and means the waste material needs to be sent to a commercial MRF (Materials Reclamation Facility) to separate it prior to reprocessing. The remaining two segregate waste at the time of collection, this allows for material to be sent directly to a reprocessing facility with little or no further sorting.

Historically, recycling services have operated on a fortnightly basis with a weekly residual (black bag) waste service. In Essex there has been a shift to an alternate weekly collection approach which has now been adopted by 9 (out of 12) WCA. This approach is where the residual waste is collected one week and the recycling the next week. All food (or commingled food and garden) waste services in Essex operate on a weekly basis.

The service for flats and apartments is more variable across the county and is generally of a lower service level than kerbside properties in the same district.

The performance across the county is variable as a result of the differing levels of service, mode of operation and demographic factors. The diversion rate (combined recycling and composting rate) for WCAs in 2019/2020 ranged from 37% to over 60%. Much of this variation is within the composting element (16% to 36%) and is due to the different approaches to charging for this service. In comparison, the recycling had a much narrower performance range of 21% to 29%.

### **5.3 Residual Waste Treatment and Disposal**

The LACW that is not segregated and sent for recycling or composting is referred to as residual waste. The WDA is required to make the necessary arrangements to dispose of this waste to a suitable facility. Historically this has been to landfill sites in Essex and neighbouring counties. Although landfill capacity is diminishing this currently remains the primary disposal route for the for the c.300,000 tonnes of residual LACW generated in Essex.

### **5.4 Performance**

Measuring the performance of services and interventions on waste minimisation and recycling/composting diversion are not always easy due to the impacts of other factors and the potential for waste to be disposed of via another route outside of the LACW stream.

Although waste in Essex has remained relatively static over the last 20 years or so, this is against a backdrop of an increasing population and therefore reported waste per capita has fallen. This however has occurred at a time when Essex local authorities have removed some discretionary service and taken a tougher stance against business accessing publicly funded services. This may have driven waste into the non LACW stream rather than reduced it.

In 2019/2020 each household in Essex generated over 1 tonne of household waste. The enhancements in kerbside recycling services, the roll-out of food waste collections and the reduced frequency of residual waste collections have all led to a step change in the rate of recycling and composting. The current rate of approximately 56% is a significant increase on the 20% rate achieved in 2000. However, the performance in the past decade years has largely stagnated with limited progress being made in increasing participation or material capture.

## Acknowledgements

Legislation and policy section: thanks to Latham & Watkins LLP by Paul A. Davies, Eun-Kyung Lee, and Patrick Braasch:

[https://www.globalelr.com/2018/07/the-eu-adopts-four-directives-to-solidify-europes-leading-position-in-waste-management/#:~:text=Directive%20\(EU\)%202018%2F851,is%20valued%20as%20a%20resource](https://www.globalelr.com/2018/07/the-eu-adopts-four-directives-to-solidify-europes-leading-position-in-waste-management/#:~:text=Directive%20(EU)%202018%2F851,is%20valued%20as%20a%20resource)

[The EU Adopts Four Directives to Solidify Europe's Leading Position in Waste Management](#)

## Glossary

**AD:** Anaerobic digestion

**C&I:** Commercial and Industrial

**CEP:** EU Circular Economy Package

**ECC:** Essex County Council

**JMWMS:** Joint Municipal Waste Management Strategy for Essex

**LACW:** Local Authority Collected Waste

**MBT:** Mechanical Biological Treatment

**MRF:** Materials Reclamation Facility

**RCHW:** Recycling Centres for Household Waste

**WCA:** Waste Collection Authorities

**WDA:** Waste Disposal Authority

## Household Waste and Recycling Performance 2019/20

Authority	Household Residual Waste (Tonnes)	Household Waste Reused or Recycled (Tonnes)	Household Waste Composted (Tonnes)	Total Household Waste (Tonnes)	Household Waste Reused or Recycled (%)	Household Waste Composted (%)	Total Recycled or Composted (%)	Number of Households	Total Household Waste Per Household (Kgs)	Residual Household Waste Per Household (Kgs)
Basildon Borough Council	40,667	18,300	17,686	76,654	23.9%	23.1%	<b>46.9%</b>	78,837	972	516
Braintree District Council	27,215	13,069	15,989	56,273	23.2%	28.4%	<b>51.6%</b>	65,141	864	418
Brentwood Borough Council	15,859	6,757	5,179	27,796	24.3%	18.6%	<b>42.9%</b>	33,834	822	469
Castle Point Borough Council	16,021	8,001	7,905	31,928	25.1%	24.8%	<b>49.8%</b>	38,843	822	412
Chelmsford City Council	32,251	15,624	21,700	69,574	22.5%	31.2%	<b>53.6%</b>	76,712	907	420
Colchester Borough Council	27,373	16,091	16,071	59,535	27.0%	27.0%	<b>54.0%</b>	82,802	719	331
Epping Forest District Council	22,719	14,465	16,208	53,393	27.1%	30.4%	<b>57.4%</b>	56,864	939	400
Harlow Council	15,629	7,642	3,410	26,681	28.6%	12.8%	<b>41.4%</b>	37,975	703	412
Maldon District Council	9,932	6,131	7,489	23,552	26.0%	31.8%	<b>57.8%</b>	28,342	831	350
Rochford District Council	12,767	8,081	11,655	32,503	24.9%	35.9%	<b>60.7%</b>	36,135	899	353
Tendring District Council	28,489	9,198	7,223	44,910	20.5%	16.1%	<b>36.6%</b>	71,007	632	401
Uttlesford District Council	15,462	8,991	6,330	30,784	29.2%	20.6%	<b>49.8%</b>	37,589	819	411
<b>Waste Collection Authority Total</b>	<b>264,383</b>	<b>132,353</b>	<b>136,846</b>	<b>533,582</b>	<b>24.8%</b>	<b>25.6%</b>	<b>50.5%</b>	<b>644,081</b>	<b>828</b>	<b>410</b>
<b>Essex County Council - Waste Disposal Authority Total</b>	<b>52,203</b>	<b>50,555</b>	<b>20,240</b>	<b>122,997</b>	<b>41.1%</b>	<b>16.5%</b>	<b>57.6%</b>	<b>644,081</b>	<b>191</b>	<b>81</b>
<b>Recycling of MBT Residual Waste</b>		<b>18,336</b>								
<b>Essex Waste Partnership Total</b>	<b>298,251</b>	<b>201,243</b>	<b>157,085</b>	<b>656,579</b>	<b>30.7%</b>	<b>23.9%</b>	<b>54.6%</b>	<b>644,081</b>	<b>1,019</b>	<b>463</b>

Table showing volumes and proportions of waste by waste type and Local Authority

### Household Waste Composting by Material Type 2019/2020

Authority	Green Garden Waste Composted (Tonnes)	Commingled Green Garden & Food Waste Composted (Tonnes)	Food Waste Composted (Tonnes)	Total Household Waste Composted (Tonnes)
Basildon Borough Council	716	16,970	-	17,686
Braintree District Council	11,691	-	4,298	15,989
Brentwood Borough Council	4,074	-	1,106	5,179
Castle Point Borough Council	5,065	-	2,840	7,905
Chelmsford City Council	16,156	-	5,544	21,700
Colchester Borough Council	10,205	-	5,866	16,071
Epping Forest District Council	-	16,208	-	16,208
Harlow Council	469	-	2,941	3,410
Maldon District Council	5,174	-	2,314	7,489
Rochford District Council	-	11,655	-	11,655
Tendring District Council	3,538	-	3,685	7,223
Uttlesford District Council	3,382	-	2,948	6,330
<b>Waste Collection Authority Total</b>	<b>60,472</b>	<b>44,834</b>	<b>31,541</b>	<b>136,846</b>
<b>Essex County Council - Waste Disposal Authority Total</b>	<b>20,240</b>	<b>0</b>	<b>0</b>	<b>20,240</b>
<b>Essex Waste Partnership Total</b>	<b>80,711</b>	<b>44,834</b>	<b>31,541</b>	<b>157,085</b>

Table showing volumes of garden, green and food waste by Local Authority

### Non-Household Local Authority Collected Waste 2019/20

Authority	Non-Household Residual (Tonnes)	Non-Household Food Composting (Tonnes)	Non Household Green Composting (Tonnes)	Non-Household Dry Recycling (Tonnes)	Total Non-Household Waste (Tonnes)
Basildon Borough Council	3,308	-	-	301	3,609
Braintree District Council	3,185	38	275	498	3,996
Brentwood Borough Council	1,381	-	-	384	1,766
Castle Point Borough Council	1,663	-	-	-	1,663
Chelmsford City Council	4,526	96	-	251	4,873
Colchester Borough Council	1,751	-	-	267	2,018
Epping Forest District Council	109	51	-	-	160
Harlow Council	-	-	-	-	0
Maldon District Council	-	-	-	-	0
Rochford District Council	-	-	-	-	0
Tendring District Council	9	-	-	-	9
Uttlesford District Council	2,655	-	-	-	2,655
Essex County Council				16,714	16,714
<b>Waste Collection Authority Total</b>	<b>18,587</b>	<b>186</b>	<b>275</b>	<b>18,415</b>	<b>37,463</b>

Table showing volumes of Non-Household waste by Local Authority.

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