

# LONDON ASSEMBLY

## Wasting London's Future



**Environment Committee**

March 2018

Holding the Mayor to  
account and investigating  
issues that matter to  
Londoners

**LONDON**ASSEMBLY

# Environment Committee Members



The Environment Committee examines all aspects of the capital's environment by reviewing the Mayor's strategies on air quality, water, waste, climate change and energy.

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# Leonie Cooper AM

Chair of the Environment Committee



London is wasting resources, treating valuable things as nothing more than rubbish. Things that Londoners could pass on to other Londoners for shared, or repeated, use are ending up being treated as waste. Metals turned into jewellery, coffee grounds turned into fuel to power buses, upcycling and free-cycling – the opportunities are there, but we often ignore them.

We must do more to develop the so-called circular economy, supporting more small and medium businesses to develop innovative approaches.

In addition, compared to other cities, London's recycling rate is low and has stagnated over the last 5 years. We can and must do better. Londoners might move house a lot, lead busy lifestyles and enjoy city life – people who live in Milan enjoy a similar lifestyle, but manage to recycle at much higher levels than Londoners do. City Hall, working in conjunction with the London boroughs, must do more to make it easy for us to recycle. We really must step up and deal with our own recycling, as countries like China announce that they don't want our low-grade mixed plastics any more – and we should not be looking to sending it to other countries, such as Vietnam or Indonesia, instead. Hitting the Mayor's target of 65 per cent municipal recycling by 2030 will be very challenging, so we need a step change to make this happen.

Unlike other parts of the UK, England is lagging behind in what it does with food waste. There is an urgent need for London to move ahead with separating all food waste, whether from homes, cafes, or restaurants, and use it to create gas as it is broken down in anaerobic digestors. No food waste should really go anywhere else – except into composters.

Finally, as landfill sites are closed and we look toward London being a zero-waste to landfill city, we will see waste previously sent to landfill going to Energy from Waste plants instead. This should be only the waste that cannot be re-used, recycled or sent to anaerobic digestion and the Energy from Waste plants serving London

**“Hitting the Mayor's target of 65 per cent municipal recycling by 2030 will be very challenging, so we need a step change to make this happen”**

should be the most efficient and clean possible, producing the minimum possible emissions and producing the maximum possible energy and heat.

This report explores all aspects of the waste hierarchy, from the vital need to re-designate some waste as re-usable materials, through recycling, segregation, collections, food waste and anaerobic digestion to energy from waste and landfill, and then makes a series of recommendations to the Mayor.

If London is to meet its Mayoral targets urgent action is needed, and we commend our recommendations to the Mayor.

# Summary

## Wasting London's future resources

London's growing waste problem poses a serious threat to the environment, wasting natural resources and emitting too much carbon into the atmosphere. We all know this is unsustainable.

The Mayor has pledged to increase total recycling in London from 52 per cent to 65 per cent by 2030. This requires an increase in *household* recycling from 33 to 42 per cent. The Mayor has also pledged that London should send zero waste to landfill by 2030. Yet, despite attempts to increase them, household recycling rates have remained relatively unchanged for the past five years.

Because Londoners don't recycle enough waste, over half is currently burnt for energy. Sending waste to Energy from Waste Plants has been hugely successful in reducing reliance on landfill, but burning materials wastes valuable natural resources, generates carbon dioxide emissions and contributes to local air pollution.

London faces specific — but not unique — challenges to increase recycling, in particular, a transient population and a high proportion of flats. But London's recycling service is not fit for purpose and does not reflect, or work with, London's challenges. It lacks consistency across boroughs and accommodation types, needlessly confusing residents and making it harder to communicate behaviour change campaigns London-wide.

“Because Londoners don't recycle enough, over half of our waste is burnt”

# Recommendations

## Preventing waste

### Recommendation 1

The Mayor should set specific targets for circular economy procurement within the GLA group.

### Recommendation 2

To promote the circular economy, the Mayor should ensure that the LWARB Route Map to the Circular Economy is widely promoted and adopted, including funding circular economy entrepreneurs.

### Recommendation 3

The Mayor should lobby Government to further increase producer responsibility for packaging and to reduce plastic waste. This should include better signage on products so that plastics are kept in circulation for as long as possible or recycled as appropriate.

### Recommendation 4

Partnerships between circular economy operatives, such as charity shops and municipal waste services, should be strengthened by Mayoral involvement. The Mayor should aim to improve connections so that residents can easily choose to participate in the circular economy when disposing of household waste.

## Increasing recycling

### Recommendation 5

To ensure all homes have a consistent recycling service, the Mayor should include flats within the standard recycling provision offer, as stated in the draft Environment Strategy. This should include separate food waste collection.

### Recommendation 6

Recycling provision for new homes should be strengthened in the London Plan. To elevate the importance of recycling, the wording should read –



“Dwellings must be designed with adequate and easily accessible storage space that supports the separate collection of dry recyclables.”

### **Recommendation 7**

The Mayor should publish a required trajectory for each borough’s recycling rates, to ensure that future targets are met — and if these rates are not successfully met at the time of contract renewal, the Mayor should step in. In directing the services, the Mayor should ensure recommendations included in this report are taken up by the service provider.

### **Recommendation 8**

The Mayor should explore the funding options that he and others could provide to ensure the implementation of a consistent harmonised recycling service that would maximise recycling in London. However, the Committee recognises that this may take a number of years due to the length of borough waste contracts. Utilising break clauses in contracts that allow for early improvements (such as the segregation of food waste) should be actively explored by boroughs, with support from the Mayor’s team as necessary.

## **Reducing waste**

### **Recommendation 9**

When providing recycling and food waste collections, boroughs should consider reducing the frequency of residual waste collections.

### **Recommendation 10**

The Mayor should facilitate the use and, if necessary, the construction of Anaerobic Digestion facilities, to ensure food waste never ends up in landfill or incineration.

### **Recommendation 11**

The Mayor should lobby the Government to make it easier for boroughs to fine serial offenders who fail to comply with recycling regulations including landlords.

## Energy from waste and benefits of waste disposal

### **Recommendation 12**

The Mayor should set targets to reduce the total amount of biodegradable and recyclable waste sent to landfill and incineration by 2026 — and set targets to further reduce the amount by later dates.

### **Recommendation 13**

The Mayor should strongly support the construction and use of facilities within London's borders for the most sustainable management of its own waste.

### **Recommendation 14**

The Mayor should aim for London to become a zero-waste export city, conducting research on the feasibility of this, and then set a policy to achieve as close to zero as feasible, subject to overall environmental objectives.

# 1. Introduction

## Key findings

- London's recycling rate is rubbish. Our recycling rate is below the national average and has barely increased despite advancements in collection and processing.
- London burns over half of its waste for energy. This brings some benefits but has an environmental and financial cost.
- London exports a significant amount of its waste.
- The city faces several challenges in increasing recycling but these challenges also offer opportunities. Giving a standard recycling offer to all properties would increase recycling.

## Changing our approach to waste management

- 1.1 We are now more socially, environmentally and economically aware of the impact our waste is having on the planet. Recent television programmes and environmental campaigns have drawn public attention to waste and recycling. It is costing us and, with an expected population increase, the situation could get worse if we don't do something about it.
- 1.2 London is beginning to turn the tide on waste and is becoming an exemplar in tackling the scourge of plastic waste. Several of the capital's leading supermarkets and food outlets are reducing their use of plastic and more are expected to follow. Business Improvement Districts are starting to install water fountains and City Hall is working hard to go "plastic-free". But there is still more we could do.
- 1.3 We need to make it easier for Londoners to use less and recycle more. But London's recycling service is not fit for purpose and does not reflect London's challenges. There are different recycling policies across the 32 London boroughs and recycling can differ if you live in a house, high-rise block or above a shop. Londoners are needlessly confused about what they can and cannot recycle. These inconsistencies make it difficult to educate Londoners across the city about recycling.
- 1.4 London is in a unique position to change the future of its waste management. London boroughs have several waste contracts renewing in the next two years. This is where waste authorities could take the opportunity to not only implement the Mayor's Environment Strategy, but could go further in reducing waste and increasing recycling.

### The investigation

- 1.5 Evidence for this report was collected by a range of methods. During 2017 – 2018, three committee meetings were held on issues affecting waste management in London, these issues included; the circular economy, household recycling collections and Energy from Waste. All three meetings were followed by a findings report which reported on the evidence collected in the meeting. Committee members also visited several recycling and energy recovery centres as well as holding a call for evidence.

# 2. Preventing Waste

## Key findings

- Waste reduction is the best form of waste management. It could greatly relieve pressure on London's waste infrastructure.
- The circular economy will be key in reducing overall waste and increasing recycling in London.
- Alongside the benefits to the environment, the circular economy will create new jobs and contribute to the local economy.
- The circular economy is still in its infancy. Supporting new enterprises via procurement and policy will help it become further established.

## Waste reduction

- 2.1 Waste reduction is at the top of the waste hierarchy. It has even lower environmental impacts than recycling, and often requires no costly processes or infrastructure. So reducing waste in the first place has to be the best approach of all.
- 2.2 Reducing the amount of waste reduces the pressure on waste management infrastructure like recycling centres, energy from waste plants and landfill. It also makes targets like the Mayor's 65 per cent recycling goal easier to achieve.
- 2.3 Waste reduction is one of the central goals of 'circular economy policy', a major new direction in waste management thinking. ARUP found up to 60 per cent of total waste arising in London could be reduced by 2041 if we invest heavily in the circular economy.<sup>1</sup>

### The circular economy

- 2.4 The circular economy minimises the extraction of natural resources and re-uses and recirculates goods to extract the maximum value from the original manufacture. By seeking to recirculate resources after use by repair or recycling, the circular economy recognises "waste" as a valuable commodity. Examples of the circular economy include incentivised return schemes and lease-hiring models.
- 2.5 Engaging with the circular economy offers the opportunity to reduce what is viewed as waste and promote sustainable growth in London. As well as reducing waste, the benefits of the circular economy include reduced carbon dioxide emissions and economic and employment growth. WRAP found that moving to the circular economy could contribute £7 billion net benefit to London's economy.<sup>2</sup>
- 2.6 Reuse is a familiar concept: for example, the UK's charity shops diverted over 330,000 tonnes of textiles from landfill in 2017.<sup>3</sup> However, many businesses haven't heard of 'the circular economy'. In 2014, 50 per cent of small to medium size businesses researched hadn't heard of the concept.<sup>4,5</sup> It is still a relatively new concept which needs bringing into wider use.

### The Mayor's role in furthering the circular economy in London

- 2.7 A fully circular economy is some way off and will require Mayoral leadership to encourage others to follow suit. Keith James, Textiles Delivery Manager, WRAP told us — "The best way for the Mayor to do this within his capabilities is to act as an exemplar to other businesses — embodying circular economy principles throughout the GLA Group".<sup>6</sup>
- 2.8 The GLA has recently updated its Responsible Procurement Policy, reflecting the need to procure circular economy services and ensure better environmental outcomes for London. The Met procured a circular economy service during their estate reduction programme in 2015 – within 12 months,

the service had helped the Met to save over £300,000 and make significant carbon savings.<sup>7</sup>

- 2.9 The Mayor has set out plans to encourage the circular economy in London but more needs to be done to put these into action. The London Waste and Recycling Board (LWARB) published a Circular Economy Routemap in 2017. The Routemap focuses on five key business areas: built environment, food, textiles, electricals and plastics. Stakeholders in these areas have been called to action, including the Mayor and the wider GLA Family.
- 2.10 The Government also has a role in encouraging the circular economy. Extended Producer Responsibility is a policy approach under which producers are given significant responsibility, financial or physical, for the treatment or disposal of post-consumer products. In its recent Environment Plan, the Government stated that it intends to encourage producers to take more responsibility for the environmental impact of their products.

### **Case study – Making the GLA Family more ‘circular’**

The Circular Economy isn’t anything new to City Hall, but efforts have recently been ramped up. For a number of years its food waste has gone on to make biofertiliser and biogas. The Mayor recently announced stopping the use of single-use plastics and installing water fountains at City Hall – both examples of ‘designing out’ waste and the benefits of embracing the circular economy. In the wider GLA Family, the Met recently outsourced their uniform service to DHL who will provide an end-to-end supply chain for their uniform service. The Met expect this to have a positive impact on the environment as more uniforms will be recycled than before.

The Mayor’s efforts for the GLA Family to become ‘circular’ could go further. Across London, initiatives are showcasing how the circular economy can touch every part of procurement. For example, the National Union of Student’s offices in London uses Phillips LED lighting procured through the ‘pay per lux’ solution, whereby Phillips offers light as a service and retains responsibility for the performance of the lighting. The Mayor could request extended producer responsibility from each GLA procurement provider so that items are not bought but rather hired. This would give the producer a responsibility to collect and recycle the product once it has come to the end of its service life.

- 2.11 Partnerships between boroughs and charity retailers could be beneficial to both. Used goods are recirculated in the economy (often at low prices for local people) and the householder, the council or often both save on the costs of disposal. There is a great deal of scope to increase these partnerships across London’s 32 London borough. Councils can also support charities by not charging them to dispose of household items that cannot be sold or recycled, and by offering discretionary business rate relief.

### **Recommendation 1**

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# 3. Increasing recycling

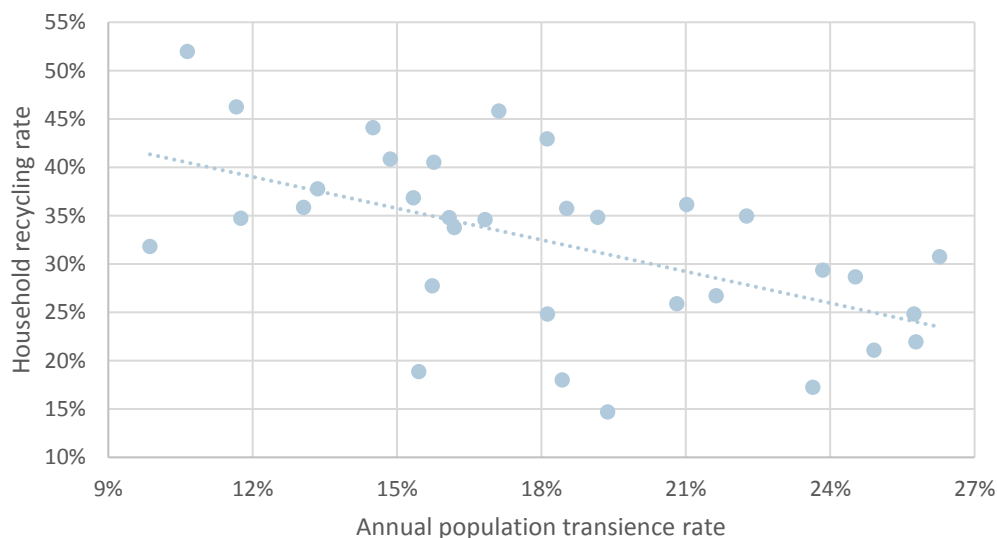
## Key findings

- Each borough in London has a different recycling system which, coupled with London's relatively transient population, makes it hard for councils to instil good recycling habits in their residents.
- Standardising waste collection has been a part of successful recycling systems across the world.
- Flats will soon become the predominant housing type in London. Ensuring successful recycling in these properties is therefore paramount. Yet flats currently have worse recycling provision than other properties.

## Working with London's challenges

- 3.1 Transience has always been a key aspect London's geographical, social and political landscape. There is no getting away from the fact that many Londoners move into the city, subsequently move from borough to borough - and move from flats to houses, or back again. Around a third of households in London's private sector have moved in the last year.<sup>8</sup> This transience is a key characteristic of London. However, when it comes to recycling it creates a challenge.
- 3.2 London's population transience is a key factor in its poor recycling rate. When people are not familiar with the recycling provision where they live, and the rules for using it, their compliance with the system may drop and the system may not work so well. This has an impact on recycling rates.

Figure 1 – Greater population transiency goes with poorer recycling rates (per borough)



Source: Office for National Statistics, Mid-2016 [Population Estimates Mid-2016](#) and DEFRA, [ENV18 - Local authority collected waste: annual results tables](#)

- 3.3 Currently, each borough has its own arrangement for waste and recycling collection. For example, Tower Hamlets provides a weekly recycling and separate food waste collection, while Newham doesn't collect glass or food recycling and all other recycling is collected fortnightly. Inconsistency across recycling systems means that each time residents move, which in London is evidently frequent, good recycling habits are undone. One way to improve recycling in the context of Londoners' migratory habits would be to standardise recycling services.

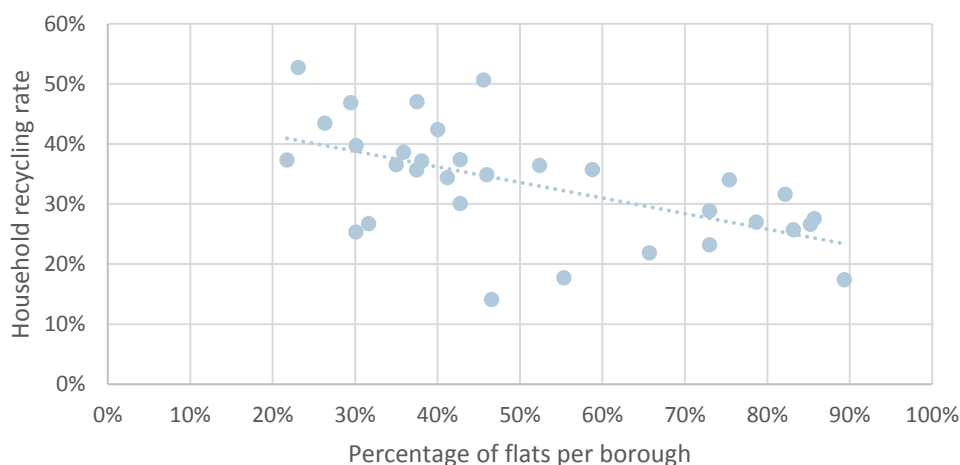
### Standardising London's recycling systems

- 3.4 Standardising recycling services increases recycling. Analysis of successful recycling systems in countries like Wales found that they all offered a comprehensive system — for example, mandatory separate collections of dry materials and food waste.
- 3.5 A degree of consistency is starting to emerge across London's recycling services. LWARB has a key role in coordinating these efforts. Most boroughs (29 out of 32) collect six dry recycling streams (although the degree of segregation varies) and over half provide a separate food waste collection to kerbside properties. The Mayor plans to improve the consistency of recycling and sees it as a key requirement to increasing recycling rates overall.

### Consistency across housing types

- 3.6 People who live in flats tend to recycle less than those in kerbside properties. WRAP found that a typical flat's recycling service yields 50 per cent less recycling than average low-rise properties.<sup>9</sup> We found a strong correlation between property type and recycling rates. Generally, the more flats a borough has, the worse its recycling rate. Reasons for this include: transience, property tenure, space limitation, deprivation, language and culture, service quality and design, and access to facilities.

Figure 2 – Boroughs with more flats tend to have lower recycling rates



Source: Office for National Statistics, [2011 Census](#) and DEFRA, [ENV18 - Local authority collected waste: annual results tables](#)

- 3.7 Over half of London's properties are flats and this proportion is set to rise. According to the London Plan, it is expected that at least 50 per cent of new developments will be flats. Improving recycling from flats is key to reaching the Mayor's overall targets, but the rise in the number of flats may affect the Mayor's recycling targets. According to LWARB, there will need to be a 40 per cent uplift of recycling from flats if the Mayor's overall recycling target is to be reached by 2030.<sup>10</sup> The London Borough of Newham reflected that "the growing proportion of London's housing stock which consists of blocks of flats is causing a drop-off in recycling rates as the contribution of green waste

composting reduces, given the vast majority of new properties being built do not have private gardens.”<sup>11</sup>

- 3.8 Increasing standardisation of recycling services in some, but not all properties, was included in the draft Environment Strategy. By 2020, waste authorities will need to demonstrate that all properties with kerbside collection receive a separate weekly food waste collection and a collection of, at a minimum, the six main dry recycling materials (glass, cans, paper, card, plastic bottles and mixed plastics). However, for flats the draft Strategy only says that boroughs should “*look to provide this to flats where feasible.*”<sup>12</sup>
- 3.9 Increasing recycling services to all properties is essential to increasing recycling overall. Flats currently have fewer recycling services when compared to kerbside properties. For example, only 14 boroughs currently provide food waste collection from all flats, compared to 19 boroughs which provide kerbside properties with separate food waste recycling.<sup>13</sup>

#### Separate food waste collections

- 3.10 Working with London’s density, rather than against it, will increase recycling. We heard that density should not be an obstacle but rather an opportunity to increase recycling, especially for food waste collections. Food waste collectors prefer density as it means greater loads for fewer trips. BioCollectors, a London anaerobic digestion plant, said “there are challenges with flats and I accept that, but what has been missing from the debate is the opportunity in flats as well...what any collector is looking for is density on that round and the density is there in London.”<sup>14</sup>
- 3.11 Separating food waste has several environmental benefits. As well as increasing recycling, food waste can be used to produce biogas and biofertiliser. Anaerobic digestion is a process used to break down food waste and other organic matter to produce energy. Reportedly, processing food waste via anaerobic digestion would reduce the UK’s greenhouse gas emissions by 21 million tonnes within 15 years.<sup>15</sup>
- 3.12 Other cities have demonstrated that food waste recycling from flats can dramatically increase recycling rates. Milan’s municipal recycling rate increased by nearly 20 percentage points following, among other initiatives, the introduction of a separate food waste collection service. Density has not been a barrier to increasing recycling in Milan – a city where 80 per cent of the 1.3 million inhabitants live in high rise buildings.<sup>16</sup>

### Recommendation 5

To ensure all homes have a consistent recycling service, the Mayor should include flats within the standard recycling provision offer, as stated in the draft Environment Strategy. This should include separate food waste collection.

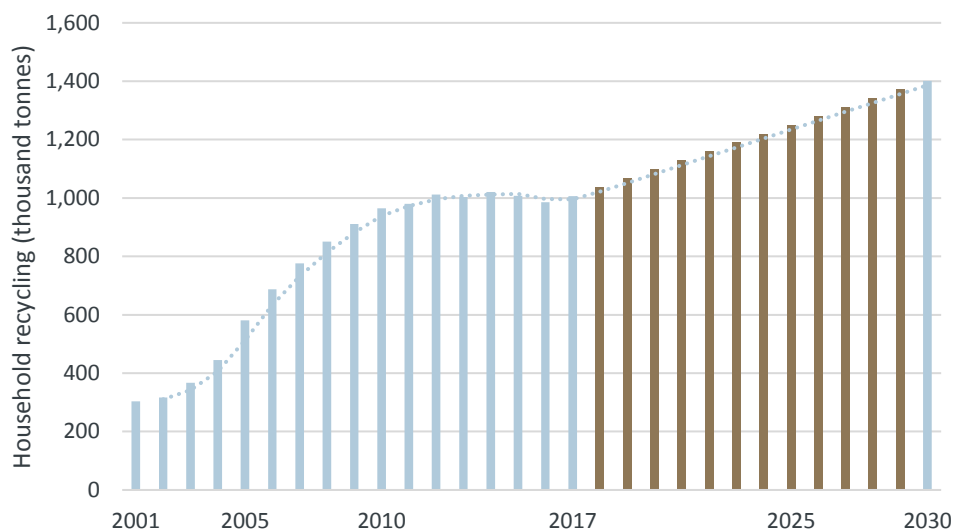
- 3.13 People, irrespective of whether they live in a flat or a house, are more likely to separate out their rubbish inside their homes rather than outside at communal bins. Yet many new homes — particularly flats — are being built with insufficient storage for this to happen. Antony Buchan, Head of Resource London, LWARB said, “A lot of properties are now being built with less than 5 per cent internal storage...I come back to that you can put all the lovely facilities you like outside of the building but if people are not already doing it in their home...it is critical. We need to make sure waste and recycling is thought about in the home as well so people can engage in the services.”<sup>17</sup>
- 3.14 The London Plan gives recycling provision for developments, but is vague and does not hammer home the need for sufficient recycling facilities. The London Plan currently states: “Dwellings should be designed with adequate and easily accessible storage space that supports the separate collection of dry recyclables.”<sup>18</sup> This wording should be stronger, stressing the importance of separation in new builds.

### Recommendation 6

Recycling provision for new homes should be strengthened in the London Plan. To elevate the importance of recycling, the wording should read – “Dwellings must be designed with adequate and easily accessible storage space that supports the separate collection of dry recyclables.”

- 3.15 A full recycling service doesn't always mean increased recycling rates. For example, the London Borough of Camden already recycles the six main waste streams, provides weekly food waste collections and has an incentivised voucher scheme. Yet Camden's recycling rate is just 27 per cent. Consequently, increasing services won't necessarily mean an increase in recycling – residents may still choose to put their waste in the residual bin rather than recycle it. However, when faced with a fortnightly residual waste and weekly recycling collection, residents are more inclined to recycle.
- 3.16 Mayoral plans to increase recycling need to be strengthened. Overall, London averages need to be rising every year and, to reach the final target, households need to be recycling 57kg more per year, per property; this is equivalent to 4,000 aluminium cans. But boroughs are already struggling to increase recycling and new initiatives require resources.

Figure 3 – Households will need to continually increase their recycling for Mayoral targets to be reached



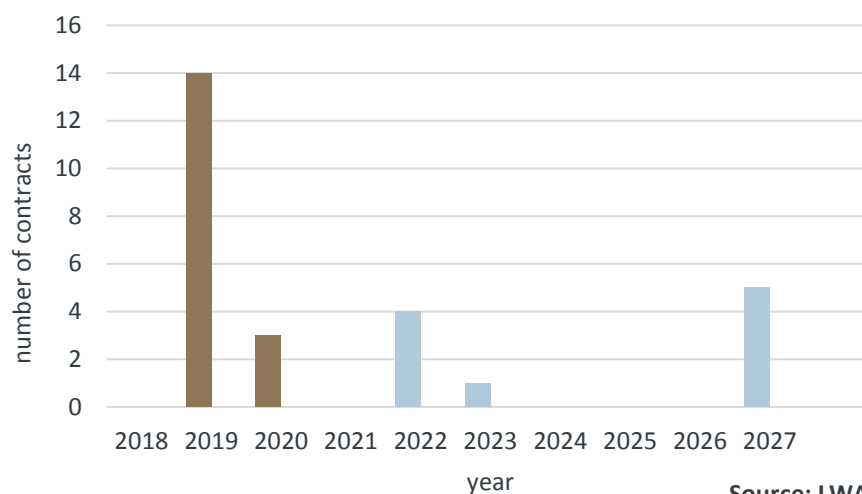
Source: Department for Environment, Food & Rural Affairs, 2017 and data supplied by GLA

3.17 Wholesale changes to recycling services can be costly. Some service changes (such as reducing residual waste collections) could release money but London Councils calls on the Mayor to provide funding – “without any funding, we believe harmonisation may occur over time, as contracts end, but this could take decades”.

#### The Mayor’s power to increase recycling

3.18 The Mayor could increase consistency, and ultimately recycling, in London directly. Between 2018 and 2020 there will be 17 recycling contracts up for renewal and four waste disposal contracts. This represents a huge opportunity. Boroughs are expected to notify the Mayor before renewing contracts and the Mayor has the power of direction when a contract could be detrimental to the implementation of the Environment Strategy. However, Shirley Rodrigues, Deputy Mayor for Environment said that “Ultimately, the Mayor does have a power of direction but that is sort of an extreme power that any Mayor would be reluctant to use. It is about partnership with the boroughs.”

Figure 4 – There will be a large number of recycling contracts coming up for renewal during 2019.



Source: LWARB, 2017

3.19 Contracts previously agreed without adequate Mayoral oversight and intervention continue to negatively affect recycling rates. The East London boroughs receive a highly restricted recycling scheme because of their long-standing PFI contract. Standard recyclables such as glass, some plastics and food waste, are required to be thrown into general residual waste. As reported by London Borough of Newham, this situation could last until 2027, and considering projected growth in these boroughs, this will become “more of an issue for London’s performance as a whole than it already is.”

### Recommendation 7

The Mayor should publish a required trajectory for each borough’s recycling rates, to ensure that future targets are met — and if these rates are not successfully met at the time of contract renewal, the Mayor should step in. In directing the services, the Mayor should ensure recommendations included in this report are taken up by the service provider.

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The Mayor should explore funding options to ensure the implementation of a consistent recycling service that would maximise recycling in London. However, the Committee recognises that this may take a number of years due to the length of borough waste contracts. Utilising break clauses in contracts that allow for early improvements (such as the segregation of food waste) should be actively explored by boroughs, with support from the Mayor’s team as necessary.

# 4. Reducing residual waste

## Key findings

- Disincentives, alongside increased recycling services and financial incentives, are needed to increase recycling. We were told that boroughs need a range of tools to increase the amount and quality of recycling.
- Most London boroughs still offer a weekly bin collection, despite fortnightly residual waste collections positively affecting recycling rates in other parts of the UK.
- Fining residents who continually violate recycling guidelines, although a contentious issue, has proven successful in increasing recycling.



## Enforcement activities

- 4.1 Encouraging and incentivising residents won't increase recycling on its own. Boroughs said they needed more "stick, rather than just carrot" to increase recycling. Enforcement tools that boroughs found useful include reducing access to residual waste and fining repeat recycling offenders.
- 4.2 The majority of household waste is recyclable. According to two different estimates, London's waste is 70 – 80 per cent recyclable.<sup>19,20</sup> Currently much less than this is placed in household recycling collections, and less still is accepted by recycling facilities. The rest goes into the 'residual waste' stream. Some contributors to this investigation have talked of the whole residual waste stream as 'non-recyclable'. It is true that when food waste, paper, plastic, glass, metal and non-recyclable materials are all mixed together in a bin or bag, it becomes very difficult and costly to separate them for recycling. But truly non-recyclable material is only a small fraction. Waste management policy must not be built around the current size of the residual stream.
- 4.3 Reducing collections of residual waste is proven to increase recycling. Analysis of successful recycling systems, such as those in Wales and Germany, show that behavioural disincentives work, so they should surely be considered.
- 4.4 Reducing residual waste collections affects recycling rates in London too. Resource London found that the biggest difference to recycling rates had been made by reducing the frequency of residual bin collections. Antony Buchan, Head of Resource London, said: "What will probably impact the greatest driving up recycling rates is moving to a restricted residual collection, whether that be by containment or by frequency, but frequency has the greatest impact."<sup>21</sup> The London Borough of Ealing recycling increased from 43 to 51 per cent when the borough changed from weekly to fortnightly collections of residual waste.<sup>22</sup>
- 4.5 The Mayor's progress towards his waste targets could be significantly strengthened by requesting that London Boroughs reduce their residual bin collections as part of their waste contracts. The majority of boroughs in London collect residual waste weekly and may continue to do so if not instructed and supported by the Mayor. London Councils requested that, alongside targets in increasing recycling, there should be targets for reducing waste.
- 4.6 Councils should segregate food waste (not mixed with garden waste) and continue with weekly food waste and recycling collections, to meet the LWARB route map to the circular economy. When it comes to residual waste, it is up to the councils to decide what collection services are most suitable for their individual borough. With cost-saving paramount to their agenda, councils should consider making savings by restricting residual waste collection. In the case of the London Borough of Ealing, this decision saved the council between £1.7-£2.3m per annum, so is well worth considering.

### Use of fines to increase recycling

- 4.7 Boroughs in London would like to use enforcement, as well as incentives, to reduce residual waste and eliminate contamination of recycling collections with the wrong sorts of materials. Previously, the option of fining residents who were violating recycling procedures was available to boroughs (Part 2 of the Environmental Protection Act 1990) and many found it useful to have such a tool in the box. However, the Deregulation Act 2015 has now made this process lengthy and resource intensive. As a result, fines are no longer seen as a useful deterrent.
- 4.8 The use of fines is controversial and would require a major programme of public engagement. But financial penalties for repeat recycling offenders have previously received cross-party support among boroughs, and the Mayor has a role in exploring how this could be introduced across London. London Councils previously lobbied against the change of powers which saw fining become a time-consuming and costly process. Feryal Demirci, Labour Councillor and Vice-Chair of London Councils and Transport Committee, said: “if you do not have the powers to be able to enforce or if you have really limited powers...it just means that this is all about carrots and there are not many carrots. We are really lacking a stick in this area.”<sup>23</sup>
- 4.9 Milan City Council found that, alongside food waste collections, fines had a positive effect on the rate and quality of recycling. However, implementing such systems is resource intensive – a dedicated crew of inspectors perform visual checks before collection and give fines for impurities, such as plastics in food waste.

### Recommendation 9

When providing recycling and food waste collections, boroughs should consider reducing the frequency of residual waste collections.

### Recommendation 10

The Mayor should facilitate the use and, if necessary, the construction of Anaerobic Digestion facilities, to ensure food waste never ends up in landfill or incineration.

### Recommendation 11

The Mayor should lobby the Government to make it easier for boroughs to fine residents who fail to comply with recycling regulations including landlords.

# 5. Energy from waste and benefits from waste disposal

## Key findings

- Burning waste to recover energy has environmental benefits compared to landfill, but it is not preferable to recycling or anaerobic digestion.
- London burns over half of its waste. The amount of waste that London burns is increasing, which negatively impacts on the environment, as some material is burnt that could be better utilised.
- Burning waste produces energy which can be used to power and warm homes. The Mayor has plans to maximise the benefits and limit the environmental impacts of energy from waste.
- London currently exports a significant amount of its waste.

## Burning, burying and exporting waste

- 5.1 Waste that isn't recycled can either be used as fuel to produce energy (mainly by incineration) or simply disposed of (mainly by landfill, or in some places by incineration without energy recovery). Energy recovery and disposal are the bottom tiers of the waste hierarchy because they destroy or render unusable the materials involved, and create harmful impacts such as greenhouse gas emissions and pollution.

### Landfill

- 5.2 Landfill is at the very bottom of the hierarchy. It uses up land and tends to emit more pollutants into air and groundwater. In particular, for organic waste such as food and paper, landfill releases much of the carbon content as methane, causing greater greenhouse impact than the carbon dioxide released by incineration. However, it may be noted that plastic waste in landfill releases a smaller amount of greenhouse gases when compared with incineration, so burning plastic waste is actually more damaging than disposing of it in landfill.

### Energy from Waste

- 5.3 Energy from waste incineration is above landfill in the hierarchy because it generates electric power and, in some cases, heats buildings. This replaces energy from other, potentially more polluting sources. Metals can also be recovered and recycled from incinerator ash, and some of the ash can be used as aggregate, reducing the need to quarry this from the ground.
- 5.4 Burning waste contributes to air pollution in London. NO<sub>x</sub>, a combination of nitrogen dioxide and nitrogen monoxide, is released into the atmosphere when fuels are burnt. Combined, London's Energy from Waste facilities emit over 2,000 tonnes of NO<sub>x</sub> per year, equivalent to 4 per cent of London's overall air pollution contributions and more than all the articulated lorries driving in London. Chlorine, arsenic, and mercury are also emitted from EfW facilities (64 tonnes of chlorine, 116 kg of arsenic, and 15 kg of mercury). As stated in the draft Environment Strategy, nitrogen dioxide is of most concern due to its impact on health.<sup>24,25</sup>
- 5.5 The Mayor seeks to further scrutinise the impact of EfW on London's environment. Energy from Waste facilities are monitored by the Environment Agency and any infractions of emission standards are reported and can lead to a halt in operations. The carbon intensity floor measures the carbon impact of Energy from Waste, which can be offset by producing greater amounts of energy and improving the efficiency of an EfW facility. The Mayor wants to limit the environmental impact of EfW and in his draft Environment Strategy calls for waste authorities to demonstrate how they meet the carbon intensity

floor. To maximise the benefits of EfW, the Mayor has requested that all facilities have Combined Heat and Power.<sup>26</sup>

#### The place of EfW in waste strategy

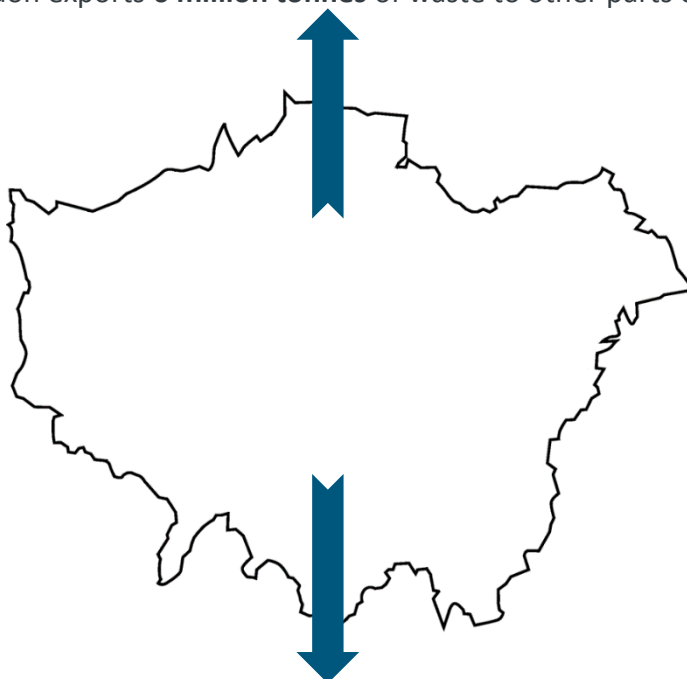
- 5.6 In 2007, the UK sent over 50 per cent of waste to landfill: now it is just 10 per cent.<sup>27</sup> SUEZ, a recycling and energy recovery provider, found that despite operating 45 landfills in the South East: “it is expected to see a rapid decline in numbers and available capacity through to 2030...this will arise generally through natural closure when the sites are full or when they reach the end of their planning permission.”<sup>28</sup> Reducing levels of waste going to landfill has, in part, led to an increase in burning waste for energy.
- 5.7 Moving waste away from landfill and into EfW has pushed it up the waste hierarchy, as energy and in some cases heat are now recovered along with metals. However, EfW plants are still receiving waste that should be dealt with further up the waste hierarchy – reducing waste altogether via a circular economy approach and improved recycling are two Mayoral goals that need developing much further.
- 5.8 The Mayor’s commitment to stop sending any waste to landfill is welcome. But he also needs to limit the amount of waste sent unnecessarily to incineration. Putting waste into landfill has been steadily declining and landfills will close within the next decade.<sup>29</sup>
- 5.9 It will not be good enough if waste that was previously sent to landfill is simply sent to incineration instead. The residual waste stream must shrink in size, through waste reduction, reuse and recycling, and not just be redirected.
- 5.10 There are better options for dry recyclables and food waste than going to incineration. Anaerobic digestion (AD) has more benefits and reduced environmental impact. AD breaks down organic matter in the absence of oxygen, producing biogas (60 per cent methane and 40 per cent carbon dioxide) suitable for a variety of energy uses, and a digestate that can be used as a soil fertiliser. Gasification and pyrolysis are more advanced thermal treatments than incineration which offer high efficiency. Both processes turn food waste and residual waste into an energy resource.

#### Waste exports, imports and self-sufficiency

- 5.11 London exports a significant amount of its waste outside its borders. Six million tonnes of waste is sent to other parts of the UK and 1.3 million is exported outside of the UK.<sup>30</sup>

Figure 5: London only recycles, and disposes of, a small proportion of its waste

London exports **6 million tonnes** of waste to other parts of the UK



London exports **1.3 million tonnes** of waste outside of the UK

Source: SLR, 2017

- 5.12 The Mayor has set a goal for London to become net self-sufficient in waste. This means that London should recycle, or use for energy, as much waste as it generates. Waste can be exported and imported as long as the exports are not bigger.
- 5.13 Managing London's waste in the capital means that Londoners both gain the benefits (such as recycled materials, electricity, heat, employment) and take responsibility for their own environmental impacts and other costs. At the moment, it can be cheaper for waste to be shipped outside the capital but this means that London loses out on the benefits of EfW and leaves other areas to deal with its waste. Currently, some waste that has been treated goes to fuel EfW facilities elsewhere in the UK and abroad.
- 5.14 Recycling within London may become an increasing critical issue. In 2017, China made a landmark decision to refuse imports of low-grade plastics. This had serious repercussions for the UK recycling market. China had previously been relied on as a recycling and disposal destination. Building up London's recycling infrastructure will help to minimise risks and create local recycling markets. Recent openings of recycling sites have proven successful. The Dagenham Plastics Facility, which recycles milk bottles into pellets, was acquired by Veolia and in September 2017 was running at full capacity.

### **Recommendation 12**

The Mayor should set targets to reduce the total amount of biodegradable and recyclable waste sent to landfill and incineration by 2026 — and set targets to further reduce the amount by later dates.

### **Recommendation 13**

The Mayor should strongly support the construction and use of facilities within London's borders for the most sustainable management of its own waste.

### **Recommendation 14**

The Mayor should aim for London to become a zero-waste export city, conducting research on the feasibility of this, and then set a policy to achieve as close to zero as feasible, subject to overall environmental objectives.

# Our approach

The Environment Committee agreed the following terms of reference for this investigation:

- To explore the Mayor's role in reducing the costs and environmental impacts of London's waste and how it is handled, with a particular focus on:
  - Reducing overall waste (informed by the 'circular economy route map' LWARB is expected to publish)
  - The potential to develop greater consistency in household recycling and food/organic waste collections between London boroughs
  - The role of energy from waste plants (incinerators and potentially others) in managing residual waste.

At its public evidence sessions, the committee took oral evidence from the following guests:

- Dr Liz Goodwin, Chair, London Waste and Recycling Board (LWARB)
- Clare Ollerenshaw, Circular Economy Manager, LWARB
- Andy Richmond, Policy & Programmes Manager, GLA
- Keith James, Textiles Delivery Manager, WRAP
- Rebecca Trevalyan, Chief Lending Officer, Library of Things
- Viv Taylor, Head of Growth & Marketing, OLIO
- Councillor Feryal Demirci, Labour Councillor for Hoxton East & Shoreditch, Vice-Chair of London Councils Transport and Environment Committee, LWARB Board member & Hackney Cabinet Member
- Andy Richmond, Environment Team, GLA
- Robert Hunt, Chief Corporate Officer, Veolia
- Antony Buchan, Head of Resource London, LWARB
- Councillor Bassam Mahfouz, Labour Councillor for Ealing, Cabinet Member Environment, Transport & Leisure, LWARB Board member
- Paul Killoughery, Group Managing Director and Owner, Bio Collectors
- Julian Walker, Chief Operating Officer, Cory Riverside Energy
- Professor Darryl Newport, University East London and Institute of Civil Engineers representative



- Tim Rotheray, Director, The Association for Decentralised Energy
- Angela Murphy, Sustainability Strategy Team Leader, Camden Council
- Doug Simpson, Principal Policy & Programme Officer, GLA
- Shlomo Downen, National Coordinator, UKWIN
- Dan Cooke, Director of Regulatory Affairs, Viridor

During the investigation, the committee also received written submissions from the following organisations:

- Nappy Ever After
- Federation of City Farms and Community Gardens
- Way to Eco Ltd
- Respace Project
- Mechline Developments Ltd
- Personal submission
- Grand Union Alliance
- Premier Workplace Services
- Western Riverside Waste Authority
- Premier Workplace Services
- Library of Things
- MPS
- Grundon Waste Management Ltd
- British Soft Drinks Association
- Charity Retail Association
- Personal submission
- UKWIN
- (AMDEA) Association of Manufacturers of Domestic Appliances
- Unpackaged Innovation Ltd.
- Mineral Products Association
- (ADBA) Anaerobic Digestion and Bioresources Association
- SUEZ, Recycling and recovery UK
- European Suppliers of Waste-to-Energy Technology (ESWET)
- London Borough of Newham
- Circular Economy Club

- Dong Energy
- Cory Riverside Energy
- Climate Change & Environment Group, Hornsey & Wood Green Labour Party
- North London Waste Authority
- Environmental Services Association
- Real Nappies for London
- Catering Equipment Suppliers Association (CESA)
- Tottenham & Wood Green Friend of the Earth

# References

- <sup>1</sup> ARUP and London Waste and Recycling Board (2017), *Circular Economy Effects on Waste Production in London – Impact Assessment Report*, Available online at [http://www.lwarb.gov.uk/wp-content/uploads/2016/12/Final-Report\\_Issue.pdf](http://www.lwarb.gov.uk/wp-content/uploads/2016/12/Final-Report_Issue.pdf)
- <sup>2</sup> WRAP (2015), *Employment and the circular economy – Job creation through resource efficiency in London*, Available online at <http://www.wrap.org.uk/sites/files/wrap/London%20Circular%20Economy%20Jobs%20Report%202015%20Online%20Version%20Final.pdf>
- <sup>3</sup> Submission from the Charity Retail Association
- <sup>4</sup> Fusion Observatory, (2014) *How to shift towards the circular economy from a small and medium business perspective: A guide for policy makers*. Available online at [https://www.kent.gov.uk/data/assets/pdf\\_file/0013/19210/How-to-shift-towards-the-circular-economy.pdf](https://www.kent.gov.uk/data/assets/pdf_file/0013/19210/How-to-shift-towards-the-circular-economy.pdf)
- <sup>5</sup> Chartered Institution of Waste Management, (2014) *The Circular Economy: what does it mean for the waste and resource management sector?* Available online at [http://www.ciwm-journal.co.uk/downloads/CIWM\\_Circular\\_Economy\\_Report-FULL\\_FINAL\\_Oct\\_2014.pdf](http://www.ciwm-journal.co.uk/downloads/CIWM_Circular_Economy_Report-FULL_FINAL_Oct_2014.pdf)
- <sup>6</sup> Evidence from Keith James, Textiles Delivery Manager, WRAP. Meeting of the Environment Committee, 13 July 2017
- <sup>7</sup> Communication with Met, June 2017
- <sup>8</sup> London Assembly Housing Committee (2016), *At Home with Renting – Improving security for London’s private renters*, London, London Assembly
- <sup>9</sup> Research provided by LWARB, October 2017
- <sup>10</sup> Evidence from Antony Buchan, LWARB. Meeting of the Environment Committee, 9 November 2017
- <sup>11</sup> Submission from Councillor Patrick Murphy, London Borough of Newham
- <sup>12</sup> Mayor of London (2017) *Draft London Environment Strategy*, available online at <https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/draft-london-environment-strategy> [accessed on 20/12/17]

- <sup>13</sup> Provided by LWARB
- <sup>14</sup> Evidence from Paul Killoughery, Group Managing Director and Owner, Bio Collectors. Meeting of the Environment Committee, 9 November 2017
- <sup>15</sup> Submission by Anaerobic Digestion and Bioresources Association
- <sup>16</sup> <sup>16</sup> Milano Recycle City, (2016) *Food waste recycling: the case study of Milan – Milano Recycle City*, available online at [https://issuu.com/giorgioghiringhelli/docs/food\\_waste\\_recycling\\_the\\_case\\_study](https://issuu.com/giorgioghiringhelli/docs/food_waste_recycling_the_case_study) [accessed on 30/10/17]
- <sup>17</sup> Evidence from Antony Buchan, LWARB. Meeting of the Environment Committee, 9 November 2017
- <sup>18</sup> Mayor of London (2017), *The London Plan – The Spatial Development Strategy for Greater London (Draft for public consultation)*, available online at [https://www.london.gov.uk/sites/default/files/new\\_london\\_plan\\_december\\_2017.pdf](https://www.london.gov.uk/sites/default/files/new_london_plan_december_2017.pdf) [accessed on 06/03/18]
- <sup>19</sup> Mayor of London (2017), *Appendix 2: Evidence Base*, available online at [https://www.london.gov.uk/sites/default/files/appendix\\_2\\_evidence\\_base.pdf](https://www.london.gov.uk/sites/default/files/appendix_2_evidence_base.pdf) [accessed on 9/3/18]
- <sup>20</sup> Mayor of London (2017) *London Environment Strategy – draft for public consultation*, available online at [https://www.london.gov.uk/sites/default/files/london\\_environment\\_strategy-draft\\_for\\_public\\_consultation.pdf](https://www.london.gov.uk/sites/default/files/london_environment_strategy-draft_for_public_consultation.pdf) [accessed on 13/2/18]
- <sup>21</sup> Evidence from Antony Buchan, LWARB. Meeting of the Environment Committee, 9 November 2017
- <sup>22</sup> Evidence from Councillor Bassam Mahfouz, Labour Councillor for Ealing. Meeting of the Environment Committee, 9 November 2017
- <sup>23</sup> Evidence from Councillor Demirci, Labour Councillor for Hoxton East & Shoreditch. Meeting of the Environment Committee, 9 November 2017
- <sup>24</sup> Transport for London (2017 – 2018) *Ultra Low Emission Zone and Low Emission Zone*, available online at <https://consultations.tfl.gov.uk/environment/air-quality-consultation-phase-3b/> [accessed on 9/3/18]
- <sup>25</sup> Energy from Waste emissions reported to the Environment Agency and supplied by the Greater London Authority Air Quality Team
- <sup>26</sup> Mayor of London (2017) *London Environment Strategy – draft for public consultation*, available online at

[https://www.london.gov.uk/sites/default/files/london\\_environment\\_strategy\\_draft\\_for\\_public\\_consultation.pdf](https://www.london.gov.uk/sites/default/files/london_environment_strategy_draft_for_public_consultation.pdf) [accessed on 13/2/18]

<sup>27</sup> DEFRA (2017) *ENV18 – Local authority collected waste: annual results table*, available online at <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables> [accessed on 19/03/18]

<sup>28</sup> SUEZ (2017) *Mind the Gap 2017 – 2030: UK residual waste infrastructure capacity requirements*, available online at <http://www.sita.co.uk/wp-content/uploads/2017/09/MindTheGap20172030-1709-web.pdf> [accessed on 19/03/18].

<sup>29</sup> Mayor of London (2017) *Draft London Environment Strategy*, available online at <https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/draft-london-environment-strategy> [accessed on 20/12/17]

<sup>30</sup> SLR (2017) *London Plan Waste – Forecasts and Apportionments, Task 3 – Strategic Waste Data*, available online at [https://www.london.gov.uk/sites/default/files/task\\_3\\_-\\_strategic\\_waste\\_data.pdf](https://www.london.gov.uk/sites/default/files/task_3_-_strategic_waste_data.pdf) [accessed on 13/2/18]



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