The CIWM is the professional body for the resource and waste management sector. It represents around 5,500 waste and resource management professionals, predominantly in the UK but also overseas. The CIWM sets the professional standards for individuals working in the sector and has various grades of membership determined by education, qualification and experience.

London Assembly – Waste Management

The opportunity to comment on the Review of Waste Policies is appreciated and it is hoped that the comments below will assist in developing the waste management policy and a zero-waste economy.

CIWM has engaged its membership through the Collection, Recycling and Environmental Cleansing special interest group and London Centre and those members feedback have helped form this response.

The CIWM response is laid out using the guideline questions for written views and information.

1. **As the Mayoral administration reviews the GLA's policies and programmes, what are the issues and challenges in seeking to reduce the costs and environmental impacts of London's waste and how it is handled? You may wish to consider:**

   a. **Reducing the materials content of goods and packaging**
   b. **Re-use, repair, sharing and other 'circular economy' methods for keeping used goods out of the waste stream**
   c. **How to increase recycling rates and improve household recycling collection systems and Londoners' use of them**
   d. **How to increase anaerobic digestion and the segregation of volatile waste matter from residual dry waste**
   e. **Disposal of waste that is not recycled, and the role and environmental implications of energy from waste by incineration or other methods**

   If you could provide or point to specific evidence or evaluations that would be very helpful.

   Views and information about issues and challenges varying across London, or in specific parts of London or for specific group of Londoners, are welcomed.

1 Reducing the Material Content of Goods and Packaging

1.1 Resource Tax

1.1.1 While this suggestion is not within the gift of the GLA there is a strong case for the Mayor along with other authorities and organisations to encourage the Government to consider it.

1.1.2 It is an economic fact that the higher the cost of any item or service the less it will be used. A good example of this in the waste management sector is landfill tax, which has had a dramatic effect on diverting waste from landfill.

1.1.3 Consideration could be given to a Resource Tax which could be applied to all resources but scaled according to the number of years resources take to replace.

1.1.4 A Resource Tax could deliver significant long-term benefits to the economy, environment and sustainability in raising the cost of finite or slow to renew resources as well as cutting global warming gas emissions.

1.1.5 Non-renewable resources including fossil fuels would have the highest level of tax, scaled according to their scarcity. This would help to enable the full environmental cost of products and services to be apparent at the point of purchase. Such an economic instrument would give manufacturers a direct incentive to minimise the use of scarce resources, reduce waste, and limit the consumption of non-renewable energy.

1.1.6 In considering any new form of taxation, some form of hypothecation to drive positive reinforcement and environmental advancements should equally be considered. This would not only drive behaviour change, but also help to facilitate many of the claimed economic benefits of a circular economy.

2 Re-use, repair, sharing and other 'circular economy' methods for keeping used goods out of the waste stream

2.1 General

2.1.1 The mayor can help promote the opportunities now available to enable more goods to be re-utilised through ensuring every Londoner considers these options as citizens, workers and supporters of community initiatives. Greater social engagement to make people think about re-use, especially acting as customers for re-used items, will be key to ensuring greater resilience for the re-made sector.

2.2 Extended Producer Responsibility

2.2.1 Again, this is something the GLA and others could press for to drive a number of positive changes in the areas of:

- Consumer behaviour such littering;
- Environmental design and innovation;

- Redress market failures.

2.2.2 Waste reduction and reuse would be more achievable if the true cost of waste disposal and the environmental burdens associated with products could be made visible at the point of purchase to help influence customer choice. Currently the true lifetime cost, including waste disposal and environmental burdens, of products are often hidden from the consumer because these costs are paid for through indirect means, usually in taxes, Council Tax and National Non-Domestic Rates. These hidden costs are particularly relevant to products designed to be disposable after only a short life such as disposable nappies and one trip containers.

2.2.3 There is also a case for the government to consider legislation to restrict the amount of non-reusable or non-recyclable materials that are used in products with a short life such as packaging, disposable nappies and other products designed to be disposable. Where the materials are designed to be recyclable this must be through economically and environmentally sustainable closed loop methods. Equally, EPR can be used to redress market failures where less sustainable materials such as virgin plastics are chosen over recycled content of comparable quality.

2.2.4 As an example - vast quantities of waste are created by unsolicited deliveries of mail or free newspapers. Much of this material is unwanted and is consigned to the waste stream without being looked at. Even if the material is recycled the life cycle is not environmentally benign and incurs a financial cost in terms of collection, transport and processing. This can be substantial if the products end up being discarded in the streets or on public transport. It may be arguable whether this is more a producer responsibility but it does appear that the polluter pays principle, enshrined in Article 14 of Directive 2008/98/EC may not be properly applied. Either way there is a case for a levy to be applied to such products to reflect their true lifecycle environmental and financial costs.

2.2.5 If the circular economy is to develop there needs to be a stronger and more sustainable market demand for secondary materials. This needs to be a combination of clear unambiguous policy and legislative drivers, economic instruments and producer responsibility. Producers are slowly waking up to the rising cost of natural resources and of waste and therefore need to be encouraged. Products and services need to be designed to ensure the circular economy develops and is self-sustaining, potentially requiring compulsion measures to ensure that recycled content is incorporated within products and services.

2.2.6 Extended Producer responsibility would help encourage or if necessary, compel manufacturers and product designers to ensure their products are at the outset either designed for repair and reuse, or at least recyclable and there are suitable recycling facilities with markets for their products.

3 How to increase recycling rates and improve household recycling collection systems and Londoners' use of them

3.1 General

3.1.1 There has been a general stalling in recycling rate increases in England, and in some cases, it is falling back. There is a need for a more progressive and innovative approach and some suggestions are set out below.

3.1.2 The Mayor's discussion document identifies problems of varying collection methods used in different boroughs and notes that there are moves to establish greater consistency, particularly within Waste Disposal Authorities and Partnerships in greater London. However, the major barrier is lack of public engagement with the need for greater segregation of their waste. Lower cost but effective social media promotion opportunities have been shown to work by the WLWA.

3.1.1 Local authorities in densely populated urban areas are faced with significant barriers to increasing recycling rates. The level of deprivation and the transient nature of the population create significant barriers. Flatted properties have historically only achieved low rates and across London which is potentially problematic given that an estimated 88% of new builds to 2030 will be flats. Significant efforts and investment will therefore be required in order to substantially increase recycling rates in this dwelling type.

3.1.2 In contrast, the highest performing waste collection authorities in England have a high proportion of green waste within the household waste stream. This is often not the case with inner London boroughs where high levels of transience presents another challenge to raising recycling rates to levels comparable with higher performing authorities. Therefore, guidance aimed at improving waste management in areas such as the domestic rented sector produced by LWARB and LEDNET are welcomed for meeting this ongoing challenge.

3.2 Food Waste Recycling

3.2.1 This is probably the single heaviest element of the waste produced by householders that can be separated from residual waste. Where there is a separate collection – food waste is generally collected every week and householders are often expected to supply liners but many people are not prepared to pay for the appropriate liners.

3.2.2 Generally, Councils supply a 7-litre capacity food waste caddy for food waste storage inside. While many people find these useful they are not suitable for everybody, particularly for households with limited storage space inside. It would therefore be helpful in enhancing participation if other smaller and neater options were offered, and it is felt that this may be a fruitful area for ongoing investigation and development.

3.3 Food Waste Recycling for Flats - Use of Under Sink Food Waste Grinders

3.3.1 Food waste recycling can provide significant challenges for householders and local authorities in flatted properties.

3.3.2 Research on use of food waste disposal units has been carried out by a number of organisations over the years – LGA Oct 2012, WRc 2015 and Defra 2008 – 2011. For the WRc project a workshop was held in July 2015, and from this event CIWM became aware that the age of the sewage system was cited as a major factor in the possibility of blockages on using food waste disposal units. If the housing estate was new (part of the research was carried out on a new site) there were less blockages reported – older sites are more likely to have blockages due to ageing sewage pipes. Changing sewage systems is not an easy option anywhere, let alone in the London area.

3.3.3 Sewage treatment works do deal with liquid waste, it is not the issue of it being liquid that causes sewage treatment works difficulties. Effluent has a different BOD (biological oxygen demand) compared to food waste so adding food to the effluent stream will mean that sewage works will have to adjust their treatment process. Other businesses that might well be adding food waste to the effluent stream (e.g. food manufacturing) have a trade effluent agreement with the sewage works who then know what type of effluent is discharged, when and set the process up to deal with it. The business is then invoiced appropriately to discharge such effluent.

3.4 Nappy Waste and Other Human Hygiene Waste Recycling

3.4.1 As a result of reduced amounts of residual waste, nappy and other human hygiene waste is, in some areas, approaching 10% of the residual household waste. It seems possible that with an aging population there could be an increase in adult hygiene waste produced by households. Support for real nappy use (this can include adult incontinence ware as well) might be an area that could be considered.

3.4.2 It is now technically possible to recycle this type of waste although there are, currently, no operational plants available in the UK. Extended Producer Responsibility could ensure that there are suitable facilities for recycling this material. In addition, extended producer responsibility would provide the funds for the waste to be collected separately.

3.4.3 The separate collection of this type of waste, whether it is recycled or not, opens the potential to consider other options for the collection of residual waste as set out below.

3.5 Frequency of Residual Waste Collection

3.5.1 When local authorities introduce food waste recycling and reduce the frequency of residual waste collection from weekly to fortnightly there is often a significant reduction in the total amount of waste produced by households and a significant increase in the amount of dry recycling. Both of which result in significant financial waste management savings (landfill tax) in addition to the operational collection savings.

3.5.2 As an example, a local authority in England that introduced three weekly collections of household residual waste for street properties found that the amount of residual waste was reduced by 17%. In addition, the amount of recycling went up by 10%.

3.5.3 Experience elsewhere is that restricting the frequency of residual waste collection and or the capacity for storage has a very positive effect on enhancing recycling levels and reducing residual waste. It would therefore be helpful to carefully consider reducing residual waste frequency in conjunction with a segregated collection of food waste as well as nappy and other human hygiene waste. Clearly this must be in the light of local situations as areas with flats and other difficult property types would find such arrangements a particular challenge.

3.6 Plastic Film Recycling

3.6.1 It is technically possible to recycle some post-consumer plastic film to make relatively low-grade products such as waste collection sacks. It is suggested that suitable outlets for the material be sought and the inclusion of this material in the dry recycling stream be priced. This is a very low density material that currently occupies a significant percentage of the volume of residual waste stored at households.

3.6.2 Removal of this material from the residual waste could certainly assist householders in managing a less frequent residual waste collection.

3.7 Glass Bottles and Jars Recycling

3.7.1 Currently glass bottles and jars are often collected for recycling co-mingled with cans, plastic bottles, plastic pots tubs and trays and drink cartons. This material is sent to a Material Recovery Facility (MRF) where the various materials are separated for subsequent recycling. However, the method of collection in a compression vehicle and the subsequent sorting process can lead to contamination of other materials and poor-quality glass. Depending on the MRF used much and sometimes all the glass is of such poor quality that it cannot be recycled into new glass bottles and jars. This can result in it being used as a sand or aggregate.

3.7.2 Glass contamination can be very detrimental to paper recycling. With the collection of plastic film there is the potential for further contamination from com-mingled glass.

3.7.3 The law states that to ensure high quality glass, paper, metal and plastic must be collected separately unless it is not technically, economically, environmentally practicable to do so.

3.7.4 It is certainly technically practical to collect glass separately, several local authorities do so. It is economically better to collect it separately as it has been shown that the prices for glass processed through a MRF is negative. In addition, separately collected glass can all be used in the production of new bottles and jars contributing to the circular economy.

3.8 Quality of Materials for Recycling

3.8.1 Quality versus quantity of recycled commodities is a topic much discussed in the waste sector, with the quality being critically important to enable recycled materials to compete with virgin materials at profitable levels in the UK and abroad. For plastics this is especially problematic. A large number of types of plastics can theoretically be recycled. However, the extent to which they are actually recycled depends on various technical, logistical and economic factors (e.g. commodity prices).

3.8.2 National surveys have shown that plastics are one of the materials which cause confusion for the householder. Plastic items are particularly complex as they are often made of more than one polymer type meaning they are typically difficult to sort and non-recyclable as well as often heavily contaminated with food, lowering the quality. Many London Boroughs currently accept plastic bottles and pots, tubs and trays (PTTs) in their recycling collections. PTTs are made from a range of polymers with Polyethylene Terephthalate (PET) being the most common followed by Polypropylene (PP).

3.8.3 Material sorting technologies are well established for plastic bottles in the UK; however, PTT sorting facilities are not fully established because of the more complex nature of the waste stream. It was recently reported in an article for the Chartered Institution of Wastes Management (CIWM) that currently there are only 10 reprocessors that recycle household plastics (these are companies that make products that can compete with virgin plastic or can be used to make a new product) and only two accept PTTs. Plastic reprocessors have very little control over the quality of the material they receive and it is key for both recyclers and reprocessors that the material is consistent so that the facility is operated to its optimum. Reprocessors are largely dependent on spot markets for selling their product this means that the market can be unstable and they can see large fluctuations in the income they receive. Despite collection of household PTT packaging developing, there are still technical challenges to recycling the PET stream within it, as well as a need to develop and establish viable and stable end markets for the material. Plastic film is not collected at the kerbside in north London. Similar to PPTs, plastic films are generally quite complex and difficult to recycle with limited market outlets.

3.8.4 Both collection and disposal authorities have very little control over what enters the waste stream without substantial compulsion measures or economic incentives and cannot influence product design higher up the supply chain. Therefore a key role for the local authorities is ensuring that their residents are clear on what can go in the recycling stream to reduce the contamination levels and ensure the material produced is consistent.

3.8.5 Currently much of the dry recyclables are collected in a co-mingled form which is subsequently sorted in a Material Recovery Facility (MRF) and it is recognised that co-mingling can lead to higher levels of non-target materials and contraries than material that is collected separately or with limited co-mingling.

3.8.6 Notwithstanding, quality will become even more important as the industry continues to develop and seek outlets. China currently takes a large proportion of the material collected for recycling in the UK. China have announced that they are tightening up on the receipt of poor quality material. This will mean that the MRFs will need to ensure high quality material or there will need to be a move towards more segregated collections or partially segregated at source. In addition, with China and other countries developing from producer economies to consumer economies, there will be an increasing need for domestic MRFs and reprocessing facilities to be developed if the UK and indeed London are to realise the benefits of a circular economy.

3.9 Low Volume Materials Recycling

3.9.1 Currently many local authorities collect paper and cardboard, food waste, glass, cans, plastic bottles, plastic pots tubs and trays and drink cartons. It is often collected in a co-mingled form or perhaps in twin or triple streams.

3.9.2 However, there are other items of household waste that are recyclable. These items of waste are produced by householders in low volumes and are often ignored in collection scheme strategies. In some cases, the materials have a high market value in other cases their segregated collection can avoid the cost of their disposal or the potential for pollution.

3.9.3 It may be possible to target some of these materials along with other collections. Alternatively, a dedicated collection system could be considered, possibly on a periodic basis or perhaps monthly or an even less frequent basis initially at least. Such a novel collection system would require careful trialling and costing. The materials that could be considered can include:

- *Aluminium foil – High market value*
- *Textiles – High market value*
- *Small waste electrical and electronic equipment (WEEE) – Taken for recycling under producer responsibility scheme*
- *Mobile phones – some have reuse value but can be recycled*

- *Miscellaneous ferrous and non-ferrous metal such as cooking pots and pans – Can be high value*
- *Cooking oil and fat – High market value*
- *Bric-a-brac and items such as old spectacles – Low value but potential for reuse*
- *Printer cartridges – no value but potential for reuse*
- *Household batteries – Taken for recycling at no cost under producer responsibility scheme*
- *Fluorescent tubes and other bulbs - Taken for recycling under producer responsibility scheme*

3.10 Ensuring Products are Recyclable

3.10.1 There is also a strong case for legislation that requires that all products placed on the market are economically recyclable. It would initially be applicable to products with a short design life or short usage and there would need to be reasonable notice for implementation. Ideally this would be gradually adopted internationally.

3.10.2 Variable VAT is an area for consideration (Question 4) to ensuring products are recyclable. An example is France which has a tax on single trip or non-recyclable products. There are tax breaks if the product manufacturers include recycled material and if the product itself is redesigned for remanufacture or recycling.

4 How to increase anaerobic digestion and the segregation of volatile waste matter from residual dry waste

4.1 General

4.1.1 Progress on this issue, especially the development of London Borough food waste collections has halted over the past 5 years, and with budgetary constraints it is unlikely that further initiatives can be stimulated. Improving the efficiency and effectiveness of the existing initiatives through exchange of promotional ideas and materials could provide a significant boost. Also the TRiFOCAL projects will show the scope for greater food waste prevention and re-utilisation as well as the other objectives.

4.1.2 TRiFOCAL London – Transforming City FOod hAbits for Life, is the latest initiative to be led by Resource London - the partnership between WRAP and LWARB - together with Groundwork London.

The initiative aims to use innovative approaches to:

- Prevent food waste by changing planning, shopping, storage and meal preparation behaviour
- Promote healthy and sustainable eating by changing purchasing and preparation practices
- Recycle more unavoidable food waste

4.2 Review of the Waste Hierarchy

4.2.1 In terms of greenhouse gas efficiency the current waste hierarchy does not take this into consideration. With the potential changes due to Brexit, maybe this is the time to reconsider what the waste hierarchy reflects – greenhouse gas or carbon emissions or even another type of hierarchy.

5 Disposal of waste that is not recycled, and the role and environmental implications of energy from waste by incineration or other methods

5.1 General

5.1.1 Residual waste ought to be recovered through energy from waste options. However, newer systems, such as gasification and pyrolysis, have so far proven both expensive and unreliable when dealing with municipal waste.

5.2 Energy-from-Waste

5.2.1 Energy from Waste (EfW) is identified by Government as an accepted and proven form of low carbon power generation. The National Policy Statement for energy recognises EfW as a future large-scale energy generation source, where residual waste that would otherwise go to landfill is used to generate 'dispatchable' power providing peak and base load electricity on demand. National policy makes it clear that there is not an express preference for specific technology types and that it is for the market to decide how and where to build the new infrastructure that is required.

5.2.2 The London Plan supports decentralised heat networks and requires that 25 per cent of heat and power used in London should be generated through localised systems by 2025. Under current Mayoral policy, whilst achieving the Emissions Performance Standard is not a mandatory requirement for London's waste authorities, the Mayor requires waste authorities to achieve the carbon intensity floor, or demonstrate that there are steps in place to meet it in the near future, in order to be in general conformity with the Mayor's Municipal Waste Management Strategy.

5.2.3 Of note are European countries with the lowest landfill rates which also have the highest levels of both recycling and incineration (for example Netherlands, Germany, Sweden, Austria, Belgium and Switzerland). Energy recovery is necessary even at higher levels of recycling in order to treat materials which cannot be recycled due to technical or economic reasons and goes some way toward understanding the increase in RDF exports to continental Europe where this material is seen as an important fuel source, particularly for plants incorporating CHP.

5.2.4 Therefore, in considering new Energy-from-Waste developments, strong consideration must be given to the achievement of good quality CHP along with the infrastructure required to support these systems. In doing so, this will help to ensure that the value of residual waste which cannot be recycled, can be maximised while minimising any impacts on human health and the environment.

5.3 Landfill

5.3.1 There is likely to always be some need for the landfilling of residual wastes which cannot be recycled alongside some of the outputs from energy recovery. However, a central goal should be to minimise the amount landfilled, and in doing so ensure that any potential harm to human health and the environment is reduced.

5.4 New Technology

5.4.1 There needs to be research and testing into new technology for treating residual waste. The aim would be to turn an ever-diminishing quantity residual waste into useful resources.

2. How, and how well, do the Mayor's current policies and programmes promote the sustainable management of London's waste?

It has been some time since the Mayor of London released policy guidance and an indication of the Mayor of London's intended direction of travel is important, in particular through sector consultation on any proposed updates to the London Plan, Municipal Waste Strategy, and Business Waste Strategy.

3. What new or different ideas and approaches could improve the Mayor's policies? Are there examples from other parts of the country or the world?

If you could provide or point to specific documents setting out these ideas or approaches this would again be very helpful.

European countries have not only alternate collection methods and high recycling alongside energy from waste but they also have charging for waste collection. CIWM commissioned research on Pay as You Throw – in 2007 where it looked at what would be needed to consider introducing this initiative.

In 2005 there was research, commissioned by CIWM looking at how other European countries were using planning and charging to implement their practices for waste and resource management.

In January 2017 Green Alliance published Recycling Reset in which they stated "The 'Pay as you throw' approach is a consistent feature of the highest performing systems in Europe".

The Green Alliance report also indicated some examples of extended producer responsibility (EPR) from Belgium and this is another driver that should be considered for items like mattresses – CIWM is aware that due to of transient population in London landlords are often emptying out rental properties and mattresses are often left out for "collection".

There was a report in 2016 An evaluation of French municipal solid waste pricing system which looked at all the incentives and charges that apply to waste management in France. These include pay as you throw, EPR and deposit refund schemes.

Landfill bans were subject to a Government consultation and there were research papers covering target materials and how they have been subject to bans or restrictions in other European countries.

4. How should the Mayor change policies or programmes?

Page 2 of the Environment Committee consultation document, under the sub-heading 'Mayoral Work' states that "*the Mayor has strategies for municipal waste and business waste. These date from the previous administration and are to be replaced by an overall Environment Strategy including waste management – a consultation draft is expected in early summer 2017".* It is recommended that a separate Strategy for Waste remains in place to fulfil the objectives of the London Plan 2011. This will ensure waste management issues remain a primary focus point within the Environment Committee particularly when actions identified in the Circular Economy Route map "*can contribute £2.8bn towards the £7bn opportunity identified*".

Consideration could be given to the Environment Strategy, the Resource London project, the London Energy Plan, the London Plan and other relevant policies and programmes.

Other points to raise or documents (use links):

LWARB to continue working closely with local authorities and share resources and information, where appropriate, when areas of waste and resource management are similar - for example development of local programmes to support the acceleration of circular economy and liaison with the large variety of social enterprises such as London Re-use.

Communications with all residents is key for all waste and recycling collection services. Resource London and WRAP are working on a system to categorise residents' attitudes to recycling and how best to communicate to that group of people. Communications tools to use are yet to be developed.

While consistency in recycling waste streams is to be encouraged to ensure the recycling messages are familiar to all residents in all London boroughs the methods used to collect these materials cannot be the same for all properties, for example the way in which recycling is collected from a block of flats will be considerably different to a semi-detached property and back to back terraced properties will be collected differently again. This is all due to the availability of storage space of the materials to be collected at the householder property where a wheeled bin could be used or space saver sacks.

http://www.wrap.org.uk/content/household-recycling-collection-systems

http://www.letsrecycle.com/news/latest-news/milton-keynes-trials-reusable-recycling-sacks/

The use of community recycling points requiring householders to deliver their waste to specific collection points. Reverse vending machines could also be considered.

http://www.apse.org.uk/apse/index.cfm/news/2016/going-underground-could-underground-waste-storage-systems-be-the-way-forward/

http://www.reversevending.co.uk/Reverse_Vending_Machines.html

Communications are key to any policy being successful. Budgets within local authority's means communications are not as a high a priority as they could be, other options have to be considered. London has a very high tourist population each producing a significant quantity of waste 'on the go'. Using hotels, guest houses, tour guides, etc. to spread the word to use the street recycling bins should be encouraged and therefore ought to be provided.