Agenda Item

NORTH LONDON WASTE AUTHORITY	
REPORT TITLE: CIRCULAR ECONOMY UPDATE	
REPORT OF: MANAGING DIRECTOR	
FOR SUBMISSION TO: AUTHORITY MEETING	**DATE:** 25 September 2015

SUMMARY OF REPORT:

This report updates Members on the 'circular economy' and seeks approval for two associated activities..

RECOMMENDATIONS:

The Authority is recommended to:

i) note the consultation response submitted to the European Commission on the 'circular economy' under delegated authority; and

ii) give approval for representations to be made to the LGA on the implementation of a circular economy, and for involvement in and a contribution towards research on the potential impacts of a 'circular economy' on local authorities as set out in the report.

Signed by the Managing Director:

Date: 16 September 2015

1. Background

1.1. The European Commission put forward waste policies in July 2014 that included a 70% re-use and recycling target for municipal waste alongside a series of wider proposals. With the appointment of the new Commission these proposals were withdrawn in December 2014, but it was promised that more ambitious proposals would subsequently come forward. The Commission launched a consultation at the end of May this year on the concept of the 'circular economy' and the Authority delegated authority to officers at its last meeting in June to respond.

1.2. This report sets out subsequent and associated activity.

2. The Circular Economy

2.1. The traditional way in which products are made, distributed, sold, used and discarded can be described as a 'linear economy'. This model is widely held to be wasteful of finite natural resources, and the established activities of re-use and recycling are familiar ways of reducing the practice and impacts of linear working.

2.2. The 'circular economy' is a concept or tool that goes further than currently established activities in that it focuses relatively less on products but more on the materials from which products are made. The European Commission stated that the circular economy "aims to maintain the value of the materials and energy used in products in the value chain for the optimal duration, thus minimising waste and resource use. By preventing losses of value from materials flows, it creates economic opportunities and competitive advantages on a sustainable basis." (EC Circular Economy Questionnaire, 28 May 2015).

2.3. The figure below further sets out the difference between these two models:

Linear Economy (use and discard – resources move one way)		
↓	Dig up resources	↓
↓	Make products	↓
↓	Distribute and sell products	↓
↓	Use products	↓
↓	Throw away (often bury in landfill sites)	↓

Circular Economy (use and reuse – resources constantly circulate)		
←	Design products that use recovered resources	←
↓		↑
↓	Make such products	↑
↓	Lease or sell with a deposit such products	↑
↓		↑
↓	Use such products	↑
→	Repair / reuse if possible (directly or after disassembly)	→
	Recycle otherwise if possible	
↓	Recover energy otherwise	↑
→	(renewable energy and energy security benefits)	→

2.4. The key points taken from the Authority's formal response to the European Commission are:

- Different member states will have different aspirations in relation to the circular economy and there will be differences depending upon geographic area – urban versus rural for example. A new package of measures needs to be sufficiently flexible to accommodate this variability.

- There will be a need for standardised reporting methodologies to measure progress.
- Financing should feed through the system. The costs that are borne by organisations such as NLWA dealing with waste at the end of the process need to be thrust at least in part back up the pipe to the parties benefitting from the up-pipe pre-waste economic activity.
- However, the end of the pipe isn't the place to start developing the circular economy. Setting higher recycling targets for example is not the way to start developing the circular economy. It is important to resist the 'quick fix' option by focussing on waste.
- In developing a circular economy approach there may need to be a change to expectations and delivery of domestic waste collection. A perceived entitlement to a free weekly collection service for all materials for example will inevitably lead to leakages from the circular system.
- However, an appropriate focus on pre-waste activities, recycling and composting will ensure that the residual waste which is left for waste managers is unrecyclable rubbish from which most value can be obtained by extracting energy (and reducing the use of irreplaceable fossil fuels). There is a role therefore in the transition and implementation of a circular economy for energy-from-waste, and this needs to be recognised in the process.

2.5. The Authority's full explanatory response is set out at Appendix 1, and the accompanying questionnaire (23pp) is on the Authority's website[1].

3. Further Activity on the Circular Economy

3.1 It is not clear from media reports, government announcements or liaison with other waste disposal authorities as to the extent of the government's engagement with the European Commission's work on the circular economy (CE), despite its strategic importance and potential fundamental impacts on our economy. Similarly the extent to which the Local Government Association (LGA) has been addressing this issue has not been clear either.

3.2 In August the managing directors of the statutory joint waste authorities met to discuss and share ideas on the points they would be making to the European Commission, and what other steps might be taken to help move towards a circular economy, but without placing inappropriate burdens on local authorities.

3.3 A background paper was produced to inform any work on representations to protect the interests of local government in this regard, and this is attached as Appendix 2.

3.4 It urges the LGA to prompt the government to make it a duty for citizens to recycle, and to undertake or commission a range of activities in areas such as designing products for sustainable use and re-use, developing 'producer responsibility' schemes, banning excess packaging, working more with the third sector, working with the private rented sector (particularly housing associations) to increase re-use and recycling, and developing markets for recyclable wastes. It also seeks further

[1] http://nlwa.gov.uk/consultations/our-responses

support of ‘recycling on the go’ work and reviewing the powers available to local authorities particularly to require recycling and control contamination.

3.5 Members are recommended give approval for these representations to be made to the LGA on the implementation of a circular economy.

3.6 Following on from this, it is also suggested that the joint waste disposal authorities will commission through the Chartered Institution of Wastes Management some research into the potential consequences to local authorities of the European Commission and member state governments implementing a circular economy, so that any adverse impacts (practical or financial) can be quantified as well as possible. It is expected that this work would be done in stages as the Commission’s proposals (and the national means of implementation) become clear, and that it could be done by a university with expertise in wastes management or an appropriate consultancy. It is proposed that the Authority agrees to expenditure of up to £20,000 on such research as its share of the cost amongst the other joint waste disposal authorities. In agreeing this recommendation, the Authority will be ensuring it is as well equipped as possible to support and/or improve relevant Commission proposals and, conversely, to rebut from a fully informed and/or evidence-based perspective any proposals that might have an adverse impact on the Authority and its constituent borough councils.

3.7 Members are recommended to approve this activity and expenditure.

4. COMMENTS OF THE FINANCIAL ADVISER

4.1 The Financial Adviser has been consulted in the drafting of this report and has no comments to add.

5. COMMENTS OF THE LEGAL ADVISER

5.1 The Legal Adviser has been consulted in the preparation of this report, and comments have been incorporated.

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Appendix 1

EU Circular Economy Consultation

Commentary Paper from the North London Waste Authority (NLWA), UK

Précis of key points

The North London Waste Authority's (NLWA's) key points are shown in text boxes below, supported by body text. However, in summary our key points are:

- Different member states will have different aspirations in relation to the circular economy and there will be differences depending upon geographic area – urban versus rural for example. A new package of measures needs to be sufficiently flexible to accommodate this variability.
- There will be a need for standardised reporting methodologies to measure progress.
- Financing should feed through the system. The costs that are borne by organisations such as NLWA dealing with waste at the end of the process need to be thrust at least in part back up the pipe to the parties benefitting from the up-pipe pre-waste economic activity.
- However, the end of the pipe isn't the place to start developing the circular economy. Setting higher recycling targets for example is not the way to start developing the circular economy. It is important to resist the 'quick fix' option by focussing on waste.
- In developing a circular economy approach there may need to be a change to expectations and delivery of domestic waste collection. A perceived entitlement to a free weekly collection service for all materials for example will inevitably lead to leakages from the circular system.
- However, an appropriate focus on pre-waste activities, recycling and composting will ensure that the residual waste which is left for waste managers is unrecyclable rubbish from which most value can be obtained by extracting energy (and reducing the use of irreplaceable fossil fuels). There is a role therefore in the transition and implementation of a circular economy for energy-from-waste and this needs to be recognised in the process.

1. Introduction and context

1.1 This paper provides a comment on the Commission's proposals regarding the circular economy from the perspective of a municipal waste disposal authority. The paper is supplementary to our questionnaire response which is submitted alongside it.

1.2 Within the 'take, make, dispose' linear model of consumption NLWA is clearly at the end of the line. NLWA is a disposal authority, established by UK legislation with responsibility for disposing of the local authority collected waste brought to us by seven constituent borough councils in London. Established in the mid 1980s we were established with no statutory responsibility for recycling let alone any statutory responsibility for encouraging reuse or assisting in the transition to a circular economy. However, our perspective as the second largest waste authority in the UK (responsible for helping the north London boroughs dispose of almost 850,000 tonnes of local authority collected waste per year); as a long standing member of the Association of Cities and Regions for Recycling and Sustainable Resource Management (ACR+) and as an organisation with a comprehensive waste prevention programme, is that we recognise the importance of the need to transition to a circular economy and we consider that we and other authorities can play a part in this process, alongside businesses, NGOs, legislators (both European and national) and consumers.

Table 1. NLWA's statutory responsibilities

North London Waste Authority has the following statutory duties:	
1.	• To arrange the disposal of waste collected by the seven north London boroughs (Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest)
2.	• To provide places at which people resident in the area may deposit their household waste and for the disposal of waste so deposited. (Reuse and Recycling Centres - RRCs)
3.	• To store and dispose of abandoned vehicles.

1.3 NLWA also has a range of additional powers in relation to wastes management in the area including the power to make RRCs additionally available on a chargeable basis for the deposit of commercial or other controlled waste. In addition NLWA has the power to direct the waste collection authorities in its area to collect waste in a manner which will facilitate reprocessing or recycling.

2. The case for transition to a circular economy

2.1 We do not wish to reiterate all of the points made comprehensively by the Ellen McArthur Foundation in reports such as 'Growth Within: A Circular Economy Vision for a Competitive Europe'[i] or at the Commission's 'Closing the Loop' stakeholder conference on 25 June[ii]. However, particularly from a local authority perspective we see the move to a circular economy as being driven by:

- **Increasing resource scarcity** and on the counter side to this, **rising material values in the long term**. Rising material values potentially offer an opportunity for us in local government to retain the intrinsic value of products for a second, third and maybe even a fourth use prior to recycling (ideally at a local level to retain that value locally). However, the structural systems within which we operate in local government do not make it easy for us to completely valorise the circular approach e.g. the savings in waste disposal costs may be all that is captured by a waste disposal authority through multiple product use of a piece of furniture (for example) by the waste department in a local authority, but any unemployment benefit savings, or other social benefits, may accrue to entirely separate public sector organisations. Furthermore, rising material and product values and different approaches to measuring the benefits of a circular systems approach may change that analysis. NLWA for example has already been investigating different approaches to measuring the impact of our waste prevention programme, so that we not only capture the waste disposal cost savings but additionally measure some of the social and environmental benefits too. Such discrepancies need to be considered for a successful transition to a circular economy.

- **Market volatility and reliance on imports**, which in turn could put a constraint on sustainable development, will also drive us to a more circular approach within the EU e.g. setting up dismantling, repair and re-manufacture locally. There will need to be a balance between continuing open trade with non-EU countries and improvements in Europe's resource security.

- **Increasing scarcity of disposal capacity** across Europe generally and the increasing cost of landfill tax particularly in the UK.

- The **economic and particularly job opportunities** that a circular economy model can provide will also be a powerful incentive and driver for change. The case is well made that a circular economy model will create more jobs in the future. The report, entitled "The circular revolution" from Imperial College London for example (June 2015)[iii] estimates that 175,000 jobs will be created by the circular economy in the UK, amounting to almost 10% of UK unemployment, with particular opportunities for growth from plastics recycling. However, it will be necessary for any impact assessments about the benefits of the circular economy from a job creation perspective to also be clear about where the cost of these jobs will fall (i.e. producers/customers or government/taxpayers) so that a net social benefit (or an over-riding environmental benefit) can be demonstrated. This may require a new Industry Policy if these new industries are to be created in Europe.

- **Technology and innovation** will also assist in the development of dematerialisation and the sharing economy. Mobile apps and websites which enable consumers to valorise their assets such as www.theguardianhomeexchange.co.uk which allows home owners to swap houses for a holiday and Just Park (www.justpark.com) which enables people with parking space at home to make it available for others to park, will enhance and encourage the development of the sharing economy. As a local authority we can have a role in encouraging residents to use these approaches to waste less and save money in the process, subject to appropriate funding and performance measurement regimes being introduced.

2.2 Others are better placed than NLWA to further make the case for the circular economy at a macro-economic level, but from a local authority perspective we can see the merit in circular principles that move us from wasteful resource use towards keeping products and materials at their highest value for as long as possible. There are advantages of moving towards this model, not least because in a time of austerity following the economic crisis and even greater fiscal restraint in the public sector public money spent on increasingly costly waste disposal may be better spent on more worthwhile matters. There are other advantages too of moving towards a circular economy which are also increasingly persuasive. The remainder of this paper outlines some of the challenges of transition from a local authority perspective and raises some key considerations which we would like to see the Commission take into account in developing its new package of measures.

3. Key considerations and principles

3.1 As an organisation at the end of the 'take, make, dispose' economy one of the key issues for us is concern that the challenges of implementing a circular economy will result in a focus on 'end of pipe' solutions simply because they may be simpler to introduce. It would be all too easy to suggest a move to a 70% recycling target as an example, but this is surely starting at the wrong end of the supply chain. It would in our view be much more productive to look at product design for disassembly (i.e. reducing the amount of material we as waste managers have to deal with) rather than focussing on making us do more with the material we are provided with. It may be that the two approaches go hand in hand, but we are concerned that simply because of the complexity of 'pre-waste' actions that the circular economy agenda is transitioned to a

focus on waste at the end of the process. We would therefore suggest that the priority for developing a circular economy should be to improve the system before material reaches the bin rather than focus on regulating the contents or actions of the material remaining.

NLWA Comment 1.

> It is important to resist the 'quick fix' option by focussing on waste. The end of the pipe isn't the place to start developing the circular economy.

There may well be a requirement to take further action on waste in the future, but we do not consider that this should be a focus of the new package now.

3.2 In addition to the need to consider and intervene to create the circular economy at the right point in the 'take, make, dispose' chain of activity NLWA also considers that it will be important early on to consider how the financial burdens resulting from the 'take, make, dispose' approach are adjusted to best effect to stimulate circularity. The costs of wastes management for example, at the end of the 'take, make dispose' system are currently not borne by those in the pre-waste system who benefit from the 'up-pipe' economic activity. The exception being (to a varied extent) those products for which producer responsibility legislation has been implemented. We consider that the costs that are borne by organisations such as NLWA need to be thrust at least in part back up the pipe to the parties benefitting from the 'up-pipe' economic activity. For example deposit payments that we could access in proportion to materials needing disposal.

NLWA Comment 2.

> The costs that are borne by organisations such as NLWA need to be thrust at least in part back up the pipe to the parties benefitting from the 'up-pipe' economic activity.

3.3 A lack of proper accounting for the full costs of waste management is therefore another key consideration. Waste managers need to be properly paid for managing waste and the true cost should be clearly visible to the waste producer, be that the householder or manufacturer. At least in the UK, the householder doesn't see the true cost of waste management impacting on their finances and the true value of materials that may be disposed isn't accounted for in disposal pricing policy either. If the cost of disposal was more inclusive and therefore higher and visible to the producer this would also drive the transition to a circular economy model. The consumer needs to be aware of the costs of disposal so that when they come to the decision point regarding where to place something they no longer need - for re-use, recycling or disposal they should realise the consequences of that decision. Local authorities typically average out the cost of disposal so that those who don't recycle or reuse currently don't realise the financial consequences of that decision. A move to a more laissez-faire approach to wastes management based upon a perceived entitlement to a free weekly collection service for all materials (for example) will inevitably lead to leakages from the circular system. Bringing money into play through charging (for example) would ensure that not only are the costs of picking up material with a relatively limited value covered by new income but would also provide a stronger economic incentive for consumers of materials to move towards a more circular approach.

3.4 If ‘up-pipe’ changes are not implemented and waste authorities do not receive new additional funds, it is likely that financial needs will limit re-use and recycling activity.

3.5 It should also be noted that in a successful circular economy, if waste authorities only receive what remains after producers’ effective reclamation of their products, it is not at all realistic for any significant recycling targets to be imposed on local government.

NLWA Comment 3.

More inclusive and visible costing of waste management would help to drive the move to a circular economy.

3.6 Another fundamental consideration for us is the value of material and products available to the parties involved in reuse and remanufacture. Material and products really have to have a value after first use if the circular economy is to come into being (or alternatively as mentioned above the cost of disposal has to be higher to drive the transition). However, we don’t have the tools to interfere with the market to force this value shift and imposing additional costs on the EU economy will make it globally uncompetitive. So it will be a difficult to achieve in a market economy, unless the cost of virgin materials and first use products becomes so high as to force the transition.

NLWA Comment 4.

The value of materials (component parts and products) really has to be available to the parties involved in reuse and remanufacture to counteract the current limited value of second life products and materials. Hypothecation of support is also required. Perhaps this could be developed through extended producer responsibility?

3.7 An example of where the lack of appropriate financial drivers in the system is failing to incentivise a more circular approach is evidenced by the forthcoming closure of a reuse hotline (telephone line) in London. This pan-London service which allowed residents to telephone the same number from anywhere in the capital to arrange for a collection of bulky items for reuse by the nearest or most appropriate third sector organisation is closing next month due to lack of finance. It will instead be replaced by a fragmented system where individual authorities or groups of authorities can afford/justify the need for a localised phone line. The result will be multiple phone lines for reuse across the capital resulting in a more patchy service for reuse collections and potentially a conflict of messages across the different areas.

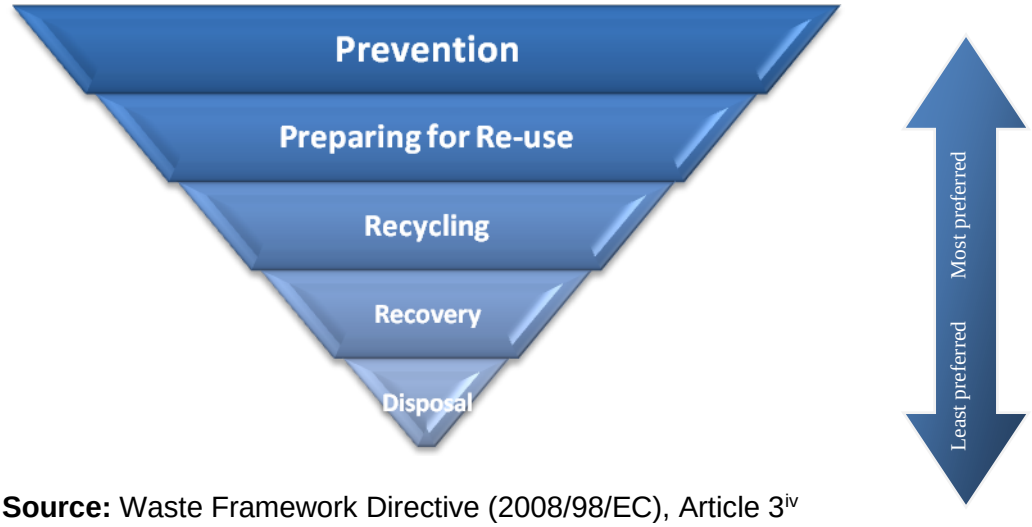
3.8 In addition, another key consideration must also be the challenge of implementation across multiple member states. For a fully functioning circular economy there will need to be global buy-in. We know from the work on climate change that orchestrating a global response to such key environmental challenges is very difficult to achieve but there may be things to learn from how negotiating targets and action on climate change has been tackled. There will be economies of scale by working Europe wide with, for example, the potential to develop more local European processing facilities and repair operations rather than transporting material to the other side of the globe. However, we are unsure if there is any evidence that the proximity of secondary materials production facilities to the potential markets that could use them (i.e. in the EU) actually incentivises the use of these materials.

3.9 The following sections of this paper raise some more detailed additional comments about the practical implementation of the package.

4 Practical considerations

4.1 As a waste authority NLWA works within the policy context established by the European Waste Framework Directive and its enshrined principle of the waste hierarchy. The Directive introduces this five-step hierarchy where prevention is the best option, followed by preparing for reuse, recycling and other forms of recovery. Disposal being the least preferred option, as described in the figure below.

Figure 1. The waste hierarchy



Source: Waste Framework Directive (2008/98/EC), Article 3[iv]

4.2 Along with its seven constituent borough councils NLWA has an agreed joint waste strategy which commits the partners to working towards a 50% recycling target by 2020 in line with current Directive requirements. However, we have also been working on an extensive waste prevention programme incorporating both encouragement of waste avoidance as well as increased levels of reuse. Further details of our last three year's work in prevention and recycling[v] are available here. (http://www.nlwa.gov.uk/docs/authority-meetings-and-reports/appendix-a1---from-interim-need-assessment---phase-2-consultation-issue-3.pdf)

NLWA Comment 5.

A key question for us is whether the Commission considers the waste hierarchy is still fit for purpose in a new economic framework of the circular economy?

4.3 NLWA's view is that a resource hierarchy might be more appropriate than a waste hierarchy in a circular economy i.e. a move to a hierarchy which takes account of, for example, the land, carbon and material footprint. NLWA would urge the Commission to reconsider the waste hierarchy. However, if the hierarchy is not reconsidered then it would be appropriate to consider where the circular economy approach sits within the current waste hierarchy – possibly straddling reuse and recycling, and incorporating avoidance as well. Energy generation would also have to be considered, but our initial view is that the various forms of energy generation from waste are necessary to support

the move to a circular economy, but that energy generation is not an integral part of it in its purest form. However, energy recovery is clearly preferable to landfill, so clearly has a significant role to play for many years to come, and will always be a preferable treatment for materials for which there is no further economic use. Clearly recovering energy from waste also has benefits in terms of European energy security too.

4.4 If a resource hierarchy is adopted instead of a waste hierarchy then this would require a different approach to measurement than currently employed. In our response to the Environmental Food and Rural Affairs (EFRA) Committee Inquiry on Waste Management in England (May 2014), NLWA argued that Government in England may want to consider moving to a carbon metric as in Scotland or a measurement regime which is similar to the Mayor of London's Greenhouse Gas Emissions Standard for measuring progress on waste management issues. Such an approach could work alongside tonnage-based measurements and indeed the tonnage information would be required to calculate the carbon impacts anyway.

4.5 We argued in our response to the EFRA Committee[vi] that a broader scoped approach to measurement would recognise the environmental benefits which may be achieved by recycling materials which may not be a priority in tonnage terms but which in the context of environmental improvements could be more valuable to prioritise for recycling. The introduction and wider use of a carbon metric would potentially aid in focussing the prevention, reuse and recycling of waste with the greatest environmental impact. However, further work would be required to understand the implication of this and if such a scheme was to be introduced there should be enough lead time to enable authorities to align themselves with this methodology.

4.6 At a local and very practical level a resource hierarchy would be initially difficult to adjust to and monitor against, but we are already finding difficulties with the purely tonnage driven metric enshrined in the waste hierarchy when we translate it to a local level and to some sectors of the material chain. We have heard the packaging industry in the UK quote the example of the unintended consequences of requiring all packaging to be recyclable for example. A wrapper for parmesan cheese reportedly contains seven types of plastic and it's not recyclable. However, if this cheese was required to be wrapped in a single polymer which could be recycled, to achieve the same levels of product preservation would require double the thickness of polymer of the current packaging. The waste hierarchy in this instance drives us towards a solution which may not be the most appropriate in overall resource management terms as food waste is such a significant issue that must be balanced against packaging use. Another example is the PET pots and trays used for ready meals. These are easily recycled, but provide a poor barrier to oxygen which means that the food products within the pots and trays have to be chilled, thus using energy in product distribution and storage. There is another plastic product available, EPO4, which is a better oxygen barrier which would not require chilling, and which would therefore provide a longer shelf life, both in-store and at home, potentially leading to less food waste and energy use in storage. However, this product is not recyclable, (but could of course be burnt in an energy-from-waste facility to generate energy and possibly heat).

4.7 The legislative framework is in favour of the linear model of 'take, make, dispose'. We expect this will need to change if we are to move effectively to a circular economy approach. The new legislative framework will also have to allow a life cycle analysis approach to justify exceptions to the concept of circularity because, as above, insisting on recyclability and closed loops may not deliver the best overall environmental outcome in all cases.

NLWA Comment 6.

> A second issue is the definition of waste and whether the current definition that is used at an EU level and translated to member state's own legislation will continue to be fit for purpose as we transition to a circular economy model?

4.8 Dame Ellen McArthur discussed the various circles within the circular economy in her presentation to the Commission's conference on 25 June 2015. In this she talks about the preferred approach being to retain the whole value of a product by initially giving it a second use, e.g. a table being used again by another owner, and only then downgrading its use to chipboard to be made into another product and then again to particle board and finally to disposal with energy recovery. In other words she describes decreasing value cycles for a product as it moves through the circular economy loop, with the goal being to retain the highest value use in the first instance and for the longest possible period.

4.9 Waste represents foregone potential so in a circular economy where we are seeking to maximise the potential of products and resources, defining something as waste immediately strikes it back into the end of the linear model approach. In order to stimulate maximum levels of reuse, i.e. retained value, it may be appropriate and necessary to reconsider the definition of waste and whether by defining materials as waste we are immediately putting up a barrier to the extension of product life and the development of the circular economy. However, there are risks of reinterpreting the definitions that we use in the linear economic model and then applying them to circular economy thinking. In our response to a discussion paper on clarifying the applications of the definition of waste to reuse and repair activities from the Department for Environment, Food and Rural Affairs in England NLWA made the following comments about the risks of changing the definition of waste, but was supportive of greater clarity regarding interpretation. The application of linear economic model thinking and definitions to a new circular economy model needs to be considered carefully too. Any changes to definitions to make them more appropriate to circular economy thinking should be done so as to deliver change but guard against abuse and environmental harm at the same time.

Figure 2 - Clarifying the applications of the definition of waste to reuse and repair activities - Discussion paper (Department for Environment, Food and Rural Affairs) – Extract from the North London Waste Authority Response, applicable January 2015[vii]

- NLWA is broadly supportive of any discussions that aim to clarify the *interpretation* of the definition of waste and welcomes the suggestion for greater clarity on its application.
- However, any suggestion of changes to the definition of waste itself could increase the risk of illegal trade, i.e. there is a risk of opening up the reuse market to illegal trade in what used to be waste, especially with regards to Waste Electrical and Electronic Equipment (WEEE).
- The Authority also takes this opportunity to highlight the need for regulatory control and enforcement, lack of which can deeply damage the reputation of the reuse and repair sector. Therefore any discussions about the interpretation of definition of waste should not result in greater risks for example as a result of potentially hazardous products and hazardous waste no longer being subject to the appropriate regulatory controls.
- The Authority would like the discussions to result in greater consistency in the application of the definition of waste to reuse and repair processes for all those involved in reuse and repair activity, i.e. consistent interpretation of the regulations across all those involved in providing reuse and repair services. Greater consistency of interpretation should also assist Government in its role in ensuring that resources are managed in as environmentally and socially effective ways as possible as greater consistency of interpretation will assist with measurement and thus ensure that the positive impacts of reuse and repair are fully captured.

4.10 Therefore, whilst we consider it may be necessary to reconsider our definitions and interpretations of waste in the new circular economy, a thorough consideration of the implications of change should be carried out before doing so.

4.11 Aligned with this definitional point for waste is the fact that there is a lack of EU-wide quality standards for recycled materials. The end-of-waste criteria that have been developed have generally been developed over a number of years and countries such as the UK have additionally put in place end of waste protocols for a limited number of materials. This can lead to situations where a material is classified as 'non waste' in one country, but then becomes waste when it is exported, so there is a need for greater consistency. However, we also need to ensure that in the drive for more material and products to be recovered that we don't move towards the lowest common denominator in secondary materials and product standards. There should at least be a regime of data management and reporting that reflects the additional quality and benefits that may be secured in relevant Member States.

NLWA Comment 7.

A third key issue for NLWA is to understand the role that energy plays within circular economy thinking and targets. It will be important for the Commission to be clear about the role that EfW plays in treating the waste that comes out from the inevitable imperfections and the LCA-based exceptions to the circular economy.

4.12 Energy recovery including energy-from-waste (EfW) and the use of bio-fuels will have to play a role in supporting the circular economy for non-reusable and non-recyclable

waste. In particular energy recovery which has R1 status is also not classified as waste disposal under the Waste Framework Directive so this could have an even greater contribution.

4.13 It will be important for the Commission to be clear about the role that EfW plays treating the waste that comes out from the imperfect circular economy. Our view is that EfW has an important role to play, particularly during the transition stage to a circular economy and once it is established for those materials that are left over or are too expensive to reuse or recycle. There may be instances where EfW is the most appropriate solution, for example, for treating materials of low quality which may not be suitable for recycling and serve only to contaminate higher quality recyclate. If a circular economy is working reasonably well it would be wrong to ban or restrict EfW for disposal authorities at the end of the pipe. What's left is likely to be worthless or expensive to recycle; therefore it will be important not to penalise a very helpful production of energy. Similarly it would not serve the development of the circular economy well to adopt a landfill tax type of approach to drive the circular economy by banning energy-from-waste or increasing its cost or requiring expensive intervention at the end of the pipe. Across Europe many of those with the highest usage of EfW have also achieved the highest recycling rates, which contradict suggestions that EfW detracts from recycling.

4.14 A key consideration for EfW is the efficiency at which materials may be converted to energy. More investment in district heating and cooling is necessary in order to maximise the full potential of EfW in the circular economy and avoid landfill diposal.

4.15 More than 80 million tonnes of municipal waste is still landfilled each year across the EU generating significant quantities of methane gas. NLWA is supportive of phasing out of landfill for specific material streams that reduce greenhouse gas emissions subject to *de-minimis* levels of banned wastes to still go to landfill in local authority collected waste. However, this must be supported by well managed collection and processing infrastructure and introduced such that municipalities and businesses have sufficient time to prepare. Collection systems and methods to encourage the separation of high quality recyclates are necessary so as to avoid simply substituting landfill with EfW.

4.16 Efficient EfW systems are complementary to the circular economy vision for material that is not suitable for recycling or has reached the end of its circular life.

NLWA Comment 8.

We also urge the Commission to consider the type of metric it will employ to measure progress to a circular economy.

4.17 In the example of PET pots and trays for ready meals that is quoted above (paragraph 4.6) the impact of energy use is not considered. This results in the use of recyclable material which potentially uses more energy in its use phase than a product which is not recyclable.

4.18 There will also be a need to standardise the metrics being used across different member states so that results are comparable.

NLWA Comment 9.

We would additionally like to see the Commission reassess its approach to targets and standards.

4.19 A reassessment of targets to take account of whole life and wider environmental impacts is likely to be necessary if we are to move to a circular economy and measure our progress in this area.

4.20 As a start, the **separation of reuse from recycling targets would be one approach to consider in the local authority waste sector**. Reuse does take place in different forms in today's mostly linear economy, through long-standing channels such as jumble sales, charity shops and the antiques trade, as well as online platforms such as Gumtree and eBay. However, there are opportunities to expand these practices in both scale and range of reused goods. If reuse targets were established alongside those for recycling and composting this may go some way to moving up the waste and resource hierarchy to a more circular approach. Consultation and a transitional period would clearly be required before making such changes, but rather than increasing the target for recycling, it may be better to consider the separation of reuse and recycling targets in order to move materials and products up the hierarchy at the reuse and recycling end of the chain, rather than at the recycling and disposal end.

4.21 NLWA considers that it would be prudent for the Commission to set some targets to drive progress, because targets set an ambition for the future and can also influence areas outside of the EU jurisdiction.

4.22 Standards for product reuse, durability, repairability and recyclability may also be helpful in the longer term and NLWA considers that the packaging element of products should be included within such targets and standards. Manufacturers will be the ones to determine if there's a reuse life or a material life for a product after first use. So the onus has to be on designers, manufacturers and retailers as part of their decision-making process to consider whether they design for disassembly or whether their products deteriorate to the material level. There may be a role in the transition phase to a circular economy to start with a product-sector or materials led approach to targets and standards, but long term the necessity is to encourage product re-use and therefore a product based approach rather than a materials focussed system of delivery.

4.23 An example of the impact that standards can have upon the development of circular economy is evidenced in Scotland with the Revolve Reuse Quality Standard[viii]. Zero Waste Scotland identified that a key factor in the expansion of reuse was increasing public confidence in reuse businesses and goods. The result was the Revolve Reuse Quality Standard, an externally-validated tool designed and piloted in 2011 for Scottish reuse businesses to increase footfall in stores and the purchasing of reuse goods.

4.24 The programme was first rolled out to community-based third sector reuse businesses, with 30 businesses achieving accreditation under the scheme. A further 20 businesses are currently working towards accreditation, primarily in high population areas, and piloting is soon due to begin with UK-based charity chains and the private sector. In terms of the model, businesses currently pay £100 to join the initiative as a sign of commitment and are accredited with the Quality Standard in under 12 months. This process involves training, assessments, a mystery shopper visit and other legislative

requirements, to uphold the integrity of the Standard and ensure that it remains meaningful for the public.

4.25 The concept works on the basis that businesses displaying the Revolve standard are committed to the quality of their reused products, and customer service that exceeds traditional perceptions of the second hand market. In addition, businesses carrying the logo are obliged to test all the products that they sell, overcoming trust-based apprehension that may have put buyers off in the past.

4.26 While data from Revolve is currently limited to a number of stores, businesses have reported increased sales and turnover of stock. In a sample of 10 stores, revenue has increased by just under £45,000 since 2011. Furthermore, standards such as Revolve also improve standards in the reuse sector from within, by providing a goal for businesses to aim for and opening discussion around legislation, perception and barriers to progress for the reuse of goods

4.27 There will inevitably be lots of players involved in the redirection of product and materials after first or multiple use and local authorities can have a part to play in this system. However, our role may need to be more sophisticated than at present and the onus in a circular economy system will be on product manufacturers to design for reuse and disassembly, and materials recovery only as a last resort.

5 Challenges

5.1 NLWA sees a number of challenges to the development of the circular economy:

- Member states' **varying levels of interest in intervention**. The deregulation agenda on the back of the global economic crisis and continuing difficulties in EU member states means that the **ability to access investment capital** for new systems and approaches is likely to be a challenge. Governments need to intervene where there is market failure, but no amount of intervention will help if the capital is not available to deliver progress. Accordingly the Commission could usefully assess the likelihood of accessing capital to drive and deliver on the changes that the Commission wants to see. There will be a need to quantify the value and risks for different parts of the circular economy, be that by industry sector or by member state. There is a risk that countries where unofficial circular economy practices are taking place will not be replaced by more formal circular economy practices if intervention does not happen at local country level.
- There will also be a **need for flexibility** regarding progress and delivery across the EU. For example, the ability to achieve recycling targets in an urban environment is more challenging than in more rural areas where there is a higher proportion of households with gardens and therefore the ability to contribute green garden waste to the recycling target achievement. In this case there is a need to recognise the urban challenge in relation to the cost, of recycling, timing & likely participation which in turn has implications for the speed with which developments progress. Parallel issues are likely to emerge with circular economy targets and approaches – i.e. the ability of individual member states to progress the circular economy agenda will vary, but there is also likely to be variability in the ability and speed with which different regions and areas of individual member states can move forward on the circular economy agenda.
- Another challenge will be **the need to work across sectors** to deliver change. The traditional split between municipal and commercial responsibilities is likely to be challenged by the circular economy model. For example even in recycling we see producer responsibility initiatives in packaging and WEEE leading to industry

initiatives potentially competing for product to reach recycling targets in competition to the municipal sector, which runs the risk of local authorities being left with the difficult to service, more costly producers' waste to collect and manage. As the demand for material and resources becomes ever stronger there is a risk of the public sector being locked out of the value chain at worst or at a best of different sectors competing for product take-back and materials, leading to consumer confusion and duplication of effort and resources to develop a more circular approach. In the case of WEEE for example local authorities in England have already invested in collection infrastructure supported by producer funding so that the public and private sectors are working together rather than competing. Co-operation such as this avoids the risk of private sector obligated producers competing with and devaluing local government investment in alternative collection systems which may end up being operated at a sub-optimal level due to a lack of material collected. However, if this sort of competition does materialise, authorities with responsibility for waste disposal, such as NLWA shouldn't find themselves faced with ill considered restrictions on disposal and unachievable recycling targets against material streams that contain no value other than energy because others operating in the system have already cherry picked the most valuable materials either for target achievement or cost reasons.

- There will additionally be **technical challenges** to overcome in developing a circular approach**.** Our ability to dismantle and remanufacture some very complicated products will clearly be a challenge.
- **Deciding where to start**, i.e. where to intervene will also be a challenge. As noted above, NLWA is looking at differing approaches to measuring impact and doing more work on prevention and reuse, but the circular economy calls for more joined up thinking and the engagement of many different actors across the value chain, so we know that we cannot make big steps in isolation. We also reiterate the point we made earlier in this response about not starting with the 'end-of-pipe' waste industry when looking to assign responsibilities and set targets. The Commission questionnaire question 3.4 which requests a response to the question about which product categories should be given priority in the next few years and why, is a useful approach.
- **Consumer behaviour** could also be a challenge. Research has shown that 77% of the UK population want to shop second-hand, but only 27% actually do, so changing attitudes and behaviour could take time. An approach which combines cross-territorial circular economy actions with a territorial approach to consumer behaviour change might the most effective.

5.2 One option for moving the circular economy forwards would be a new regime of financially incentivised product stewardship, perhaps led by industry trade associations and possibly commencing with voluntary agreements and approaches. Such approaches could be incentivised at the Member state level perhaps with tax breaks or other fiscal incentives to encourage industry to participate. However, even with this approach there would be a number of constitutional and informational barriers to be overcome first, and legislation would appear to be necessary to underpin the change:

- The inevitable need for devolved solutions creates subsidiarity tensions at the pan-European level and for the global corporations trying to respond to the demand for circular thinking the practicalities of implementing take-back systems, repairability initiatives and/or product design solutions which place the circular economy model at the heart of their development, the challenge of the differing approaches in each Member state will also create difficulties. The solutions that evolve will inevitably need to develop at different paces and in different ways in order to be responsive to the economic, social and environmental goals of each Member state.

- Equally there are likely to be tensions between those actors (countries and organisations) that are more advanced in their development of circular economy approaches than others. There will also be tensions between industry sectors where a circular economy approach may be easier and quicker to develop and those for whom it will be more difficult, although as others have noted, even raw material mining companies see opportunities within the circular economy approach. So the differing stages at which different Member states and industries find themselves in the progress towards a circular economy will also create tensions if blunt targets are set, particularly if they fail to recognise the differing levels of progress across the EU.
- In addition the differing data collection and measurement regimes across the EU are likely to lack comparability thus making it difficult for each Member State to compare progress and for global operators to implement standard global systems across their jurisdiction.

5.3 The Commission could also usefully build upon the work of the UK's National Industrial Symbiosis Programme (http://www.nispnetwork.com/), further support by WRAP (http://www.wrap.org.uk/content/what-industrial-symbiosis) and similar work that we expect to have been undertaken in other Member States, such that it has the best evidence-base for its ambitions and means of implementation as possible.

5.4 However, ultimately the focus should be upon the total impact of the move to make better use of resources. It shouldn't matter where products or materials go to, how quickly or by what means as long as products and materials are re-circulated.

6. Implications for and the role of local government

Target setting, reporting and data capture

6.1 Because NLWA considers it will be useful for the Commission to develop a new set of indicators for a circular economy it would be necessary for local government to change their data capture systems. Any new approach will need to be embedded in practical realism. Whatever approach we take to measuring reuse for example has to work at a waste transfer station on a wet December afternoon. We would therefore caution against the need to over-complicate data capture and to recognise the challenges that introducing a new measurement regime will create.

Collection system impacts

6.2 We have briefly touched earlier in this paper on the potential tension between different sectors wishing to capture materials for take-back, repair, re-use and/or recycling. Ideally the sectors will work together to maximise resource use and economic analysis suggests that the most profitable value creation mechanism in a circular economy lies in smaller loops, such as maintenance and reuse. As Ellen McArthur noted in the Commission's circular economy conference in June, the smaller circles such as repair and reuse which are closer to the original product will have the greatest impact. If you were to return a product back to its component parts or materials, you would lose much of the embedded energy and value added during the various stages of manufacture. However, there will be tensions between product manufacturers perhaps wanting to move to leasing approaches for new products as opposed to sale and take-back, and local government structures and collection arrangements which are established to support the 'take, make dispose' systems which are currently in place. The challenge for local government may then be to transform from a tax-payer funded public service collecting waste, into a component of a multitude of reverse logistics chains working on behalf of both producers and importers of virgin and secondary materials.

6.3 NLWA's own experience is that there is considerable demand for this new system of logistics, but the collection vehicles, routing and driver and crew training and back up systems have to be adapted to suit. Examples in north London include the successful introduction of a free '123 Recycle for Free' service for householders whereby our electrical compliance scheme DHL Envirosolutions has been working with a third sector reuse organisation who collects materials from people's homes for recycling and increasingly for reuse.

6.4 We have also seen the success of these new types of collection arrangements such as Give and Take days where residents come to give materials for free and others come to take them for free. However, for large bulky items we have recently been offering a free collection service for those wanting to donate as well as a delivery service for those coming to 'take'. It is too soon for us to tell whether the collection and delivery service has made a difference to the average tonnage of material diverted through a 'give and take' event, but on the basis that for the last two events the collection driver has had to be sent back out to pick up additional items this suggests that the service is proving a success.

Communication and behaviour change

6.5 The third impact to highlight from a local government perspective is the potential role that local government can play in encouraging citizens to take part in the circular economy. We recognise that culture change in industry will be a large challenge too, but local authorities have access to local residents and can communicate with them relatively easily. Whilst We would urge caution against feeling compelled to communicate too much about the circular economy, we still consider that local authorities can provide a key channel for behaviour change communications with consumers.

6.6 We look forward to playing our part in the transition to a circular economy, but we are realistic about the challenges that we face. We would urge the Commission to take note of the need to be practical in putting forward solutions for a more resource efficient approach.

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Appendix 2

Joint Waste Disposal Authorities (JWDAs) Group

Developing an evidence base for a circular economy

02nd September 2015

This paper has been developed by the six Joint Waste Disposal Authorities (JWDA) established by the Local Government Act 1985, namely, East London Waste Authority (ELWA), Greater Manchester Waste Disposal Authority (GMWDA), Merseyside Recycling and Waste Authority (MRWA), North London Waste Authority (NLWA), West London Waste Authority (WLWA) and Western Riverside Waste Authority (WRWA). The Authorities have 30 years' experience in delivering sustainable waste management; together the six JWDAs manage around 15% of the England's household waste. Therefore, the ability of England to meet its recycling and waste management ambitions, including statutory targets, depends on the successful delivery of aligned waste management strategies within these conurbations.

1. Purpose and objectives

1.1 The group has been established to investigate implications of emerging policy changes for waste disposal, and to provide a practitioners lobbying position to help shape final proposals.

1.2 This paper outlines how local authorities have reacted to current Government waste management objectives, and outlines potential changes to legislation that are emerging in Europe. The impact of those changes is likely to be significant in terms of technical delivery and financial consequences, yet there remains a knowledge vacuum within which these decisions are being made. A study to examine the potential consequence of the outlined European proposals would therefore greatly benefit the EU and UK Government policy makers, as well as those industry and local government that need to react to it.

2. Where we are today

2.1 The principal focus of the Waste Management Plan for England is to deliver the legal objectives required by Europe to reduce municipal biodegradable waste landfilled to 35% of 1995 levels, and reach 50% recycling of municipal waste by 2020. These are realistic ambitions that have been set in-train for several years, and are now firmly embedded within the waste management strategies of local authorities. The early pace set has seen recycling and composting rates double over the last ten years, now reaching around 44%, and Defra remain convinced that there is sufficient energy from waste capacity in the pipeline to meet EU diversion targets by 2020. Indeed the gap has closed significantly, though some caution should be exercised when interpreting the figures since the target is based upon compositional analysis of local authority collected waste that doesn't really apply to the additional commercial and industrial waste which are now included. Separately from the England waste plan the devolved national Governments (Northern Ireland, Scotland and Wales) have set their own agendas, which set more ambitious targets. There is no evidence of any English appetite to push forward its own plans.

2.2 That rosy outlook has been stymied in recent years, as recycling rates have begun to stagnate; having surpassed the 40% mark nearly five years ago they have slowly increased to around 44%, where they have stubbornly remained over the last two years, leading many industry commentators to raise doubts whether the 50% recycling target will be reached by 2020.

2.3 Examining evidence from WRAP to try and pin-point the exact reasons for this stagnation tells us that recycling rates are predominately determined by the number of different materials (particular those that weigh more) which are included in the

recycling collected. In terms of dry recycling most local authorities already collect the maximum number of materials for which there are available outlets so it is difficult to make any further gains. This has been compounded by a fall in the quantity of potentially recyclable material; particularly paper (but also light-weighting of other materials like glass) that has negated gains in participation resulting in the performance in many local authorities flat-lining. The development of markets for secondary raw materials is therefore imperative to further increasing recycling.

2.4 Clearly, the most significant area for potential gain is food waste, which represents around a fifth to a quarter of waste collected at the kerbside, or a third of the residual waste bin. Food waste collections however are more expensive for local authorities to implement, consequently many local authorities have not put a collection in place, or more ominously, some have taken the difficult decision to remove them due to budget constraints. Moreover, once implemented participation and capture levels fall well below those of other waste streams. The consequences of this for the national recycling targets can be observed in the published statistics which show that separately collected food accounts for only 2.9% of recycling (2013/14) when it could realistically be ten times that figure. The question that needs to be answered in order to meet the 50% recycling target is therefore not one of technical feasibility, but how are we going to pay for it?

2.5 There are now concerns that waste arisings may be starting to grow again. The most recent data shows that total household waste nationally increased by 3.5%, with the main component of that increase being residual waste, which increased by 2.5% (to December 2014). Those figures are reflected in the data held by the JWDAs, which show the upsurge is predominantly due to an increase in bulky wastes delivered to Household Waste Recycling Centres. This may, in part, be due to transfer of waste arising between District and HWRC streams locally, though at a national level it suggests that the improving economy is again leading to an increase in consumption, in turn leading to more wastes, which means waste management costs are likely to increase going into the future. This will be further compounded by a rising population that increasingly gravitates towards urban areas where high recycling rates are the hardest to deliver.

2.6 Local government funding, of which the JWDAs levys form part, is under unprecedented pressure. Since 2010 central government support in many JWDA areas has fallen by more than a third (with some more than 40%). Coupled with the increased cost of statutory services due to increased demand (particularly adult social care) pressure on waste disposal budgets has been intense. The current preparations for the autumn's Comprehensive Spending Review announcement (CSR 2015) are looking at the impact of a further 40% reduction in resources. Set against that background waste disposal's usual ground of "environmentally good" is not sustainable, and "cheap as possible" is the new watchword. Doing nothing is not an option, and there is a real danger that in the English policy vacuum short term financial expediency may win over longer term environmental benefits.

2.7 Set against that background the JWDAs want to act collectively, but this is area in which Government needs to take the lead, since the industry is underpinned by either regulation and fiscal incentives. That message is also mirrored by industry (the Environmental Services Association – ESA) and the professional body (Chartered Institute of Wastes Management – CIWM).

3. Resource efficiency: towards a circular economy

3.1 Whilst we grapple with meeting the 2020 targets, the European Commission is working on a new approach based upon resource efficiency, which has become known as The Circular Economy, with the long term objective of developing an economy based upon the minimal uses of resources, where materials are kept circulating in the economy for as long as possible. At the forefront of that work stream is a revision to the existing waste targets, under the following Directives:

a) Waste Framework Directive 2008;

b) Landfill Directive 1999; and

c) Packaging and Packaging Waste Directive 1994.

3.2 On the 9th July The European Parliament adopted a resolution (known as the Sirpa Pietikäinen Opinion) calling on the Commission to introduce new legislation by the end of 2015 to include the following waste related requirements:

a) clear and unambiguous definitions;

b) developing waste prevention measures;

c) binding waste reduction targets for municipal, commercial and industrial waste to be achieved by 2025;

d) setting clear minimum standards for extended producer responsibility requirements to ensure transparency and cost effectiveness of the extended producer responsibility schemes;

e) applying the 'pay-as-you-throw-principle' for residual waste combined with mandatory separate collection schemes for paper, metal, plastic and glass in order to facilitate the high quality of recycling materials; introducing mandatory separate collection for biowaste by 2020;

f) increasing recycling/preparation for reuse target to at least 70% of municipal solid waste and 80% recycling of packaging waste by 2030, based on a solid reporting method preventing the reporting of discarded waste (landfilled or incinerated) as recycled waste, using the same harmonised method for all Member States with externally verified statistics; an obligation for recyclers to report on the 'input' quantities of waste going into the sorting plant as well as the 'output' quantity of recyclates coming out of the recycling plants, preventing the reporting of discarded waste (landfilled or incinerated) as recycled waste;

g) strictly limiting incineration with or without energy recovery, by 2020, to non-recyclable and non-biodegradable waste;

h) a binding, gradual reduction of all landfilling, implemented in coherence with the requirements for recycling, in three stages (2020, 2025 and 2030), except for certain hazardous waste and residual waste for which landfilling is the most environmentally sound option; and

g) introducing fees on landfilling and incineration.

3.3 Although there is a lot of uncertainty regarding the content of the new proposals, and what will make it through the various EU approval processes the above given us closest indication of what we might expect by the end of the year.

4. The level of ambition

4.1 The JWDAs Group has examined the European proposals and whilst the core concepts of resource security and efficient usage are certainly the right things to deliver, the speed and timing need to be more carefully considered. If we take the proposed recycling targets and incineration limit, as an example then the Parliamentary motion suggests 70% recycling is delivered by 2030, but incineration of non-biodegradable and non-recyclable is banned by 2020. That leaves the question; what do we do with the significant quantity of material that isn't being recycled between 2020 and 2030? A better approach, therefore, would be to plan the appropriate level of energy from waste capacity required to treat the expected level of waste arising over the medium to long term as recycling rates increase.

4.2 The European Commission needs to take a much longer joined up strategic view that befits the complexity of what they are trying to achieve. Changing to a circular economy requires a wholescale shift in the way the whole economy works that goes beyond how products are manufactured to the way business operates, and how they access finance. Delivered in a structured way such reforms could not only benefit Government but deliver real economic advantage. Reform of the financial sector will be required to introduce new financing models, and develop tools to assess financial viability based on greater retention of assets, and much longer term cash flows as companies take responsibility for a product over a long term cycle. In that economy companies will need to adjust to revenues being generated from secondary raw materials, reuse and repair that will not manifest until much later in a products lifespan. The scale of change required for the whole economy to adopt a long term strategic approach based on resource value cannot be realistically delivered over a five or ten year timescale.

5. Understanding the impact of the circular economy on local authorities

5.1 At a time when financial pressures are falling disproportionately on local authority environmental services (that have not been afforded the protection given to other services like education and health) and has curtailed investment in the collection systems, it looks increasingly certain that recycling targets will be further increased. This will, of course, have implications for local authorities but also for UK recycling and waste management industries. Given there is very little practical evidence that a truly circular economy can be created, then there is a real danger that local authorities may face very high recycling targets, combined with more complex waste products but very little in the way of market development or adequate powers to enable delivery.
The JWDAs Group therefore see benefit in commissioning a study to examine the achievability of the outlined EU proposal, establishing the steps required to achieve the targets, and the financial implications of doing so.

5.2 Modelling the impact of a 70% high recycling target

5.2.1 The initial EU waste target review proposed a 70% recycling target for municipal waste, and despite it being later withdrawn support for this target has remained high within Europe suggesting it is still a likely outcome. In any case the EU has a legal obligation to review the current 50% recycling target, so it very likely that it will be increased to some extent. The JWDAs Group therefore view the 70% target as a central part of the study, and suggest the following should be included:

a) establish the technical feasibility of increasing recycling levels to 70% in terms of what is potentially recyclable via existing recognised markets at current levels of participation and limits to accurate recognition of recyclables;

b) establish what the current high performers are doing to achieve recycling rates between 60-65%;

c) Identify what additional materials will need to be recycled to increase recycling from current levels to 70%, and therefore the actions required to close the gap between current recycling levels and the target e.g. designing PVC trays so that they can be recycled;

d) examine the impact of Europe introducing a 'contamination limit' e.g. 2% on current recycling rates and determine how much that would increase the implementation gap to achieve a 70% recycling target;

e) Determine the cost of delivering 70% recycling for local authority collected waste; and

f) consider the measures required to improve participation and accuracy to achieve 70% recycling in a typically urban environment, where half of households are terraced or flatted properties, and there is (generally) a large transient population, often without English as their first language.

g) determine the impact of changes to recycling calculations, in particular allowing incinerator bottom ash/aggregate to be included in the calculation;

h) Evaluate the impact of the more recently introduced wider definition of municipal waste, and does this help or hinder the achievement of high targets; and

i) Consider whether a different approach to targets e.g. material specific or carbon (rather than tonnage based) measures support achievement of a better environmental outcomes.

5.3 Modelling the impact of a binding waste reduction target

5.3.1 There has been little indication from Europe as to what level any target may be set at. The initially withdrawn legislation simply asked Member States to take appropriate measures, with the only target and a non-binding aim to reduce food waste by 30% across waste across all sectors including households by 2025.

5.3.2 Waste reduction is largely the responsibility of design and manufacturing at a national level, whilst the role of local authorities is more narrowly focused on engaging residents, and improving access to waste such as furniture and clothing to enable reuse and repair. The impact of waste reduction initiatives at a national level may be difficult to predict, light-weighting of packaging for example has been occurring over the past 30 or 40 years, and may now be reaching levels were further gains are unlikely so any modelling should therefore be based on fairly modest waste reduction assumptions, accepting that there it is unlikely that waste growth has been decoupled from economic growth.

5.3.3 Nevertheless, if waste volume is reduced, and its content changed, that could impact on the potential level of recycling. It is thus essential to understand if there are links between recycling and waste minimisation targets. Some of these issues were considered in a future trends study for the 2010 Merseyside JMWMS review – the report at the link below might be useful for the study http://www.merseysidewda.gov.uk/wp-content/uploads/2012/10/RESOURCES-Future-Trends-Spple-Report-D1.pdf

5.4 Modelling the impact of the 80% packaging recycling target

5.4.1 Increasing the packaging recycling target to 80% would help to develop markets and support local authorities to deliver higher recycling targets. However, there are question marks regarding the feasibility of this target. In 2012 the government set the 2017 packaging recycling target at 72.9%. As part of that target the glass packaging industry were expected to achieve 81%, however, this resulted in very high costs for the glass packaging industry leading to a revision of the target in 2014, which was consequently reduced to 77% by 2017. Similarly the government are now consulting on whether it is feasible to reduce the plastic packaging target currently set at 47.1% in 2017.

5.4.2 The study should therefore consider the economic impact of an 80% recycling target on the packaging industry, and hence whether it is achievable in financial terms. Assuming it is technically achievable the study should then demonstrate what impact achieving 80% packaging recycling would have on increasing the range of materials that local authorities will be able to recycle and contribute to their 70% municipal waste recycling target.

5.5 Modelling the impact of residual waste charging

5.5.1 If introduced, residual waste charging is likely to have a significant impact on increasing participation rates. Experience in other countries would indicates that it is effective in increasing the quantity of recycling collected, though there has been significant variations both in the level of success (ranging from virtually no impact to a very high increase), which is in part due to different charging mechanism but also the cultural background. It is therefore worth considering

which of these approaches may successfully fit into the UK, recognising that historical investment decisions and cultural acceptance may make some charging mechanism more likely to succeed than others. The introduction of the system should be considered in the real-world context, which includes issues such as reduced or exempt fees for low income households contamination, the potential diversion of waste via illegal routes, or attempts to avoid charges by using public litter bins, HWRCs or neighbour bins. Furthermore, the limits of charging mechanism should be considered. The insensitivity of on-board weighing equipment at the household level will make it very difficult to detect differences in voluminous wastes like plastics, so the responsiveness of the householder to an increase in the charge may be poor particularly at low waste levels, and a limit on what residual waste charging can achieve may be reached fairly quickly.

5.5.2 That said, it is likely to raise levels of participation in recycling schemes particularly those related to heavy materials like paper, card, glass, garden and food waste to very high levels, and have a significant impact in tonnage terms. Taking into account these factors the work should assess what impact residual waste charging would have on the recycling rate, but also the costs involved in providing the quality alternative recycling collection services that will make residual waste collection charging palatable.

5.6 Modelling the impact of mandatory separate collection

5.6.2 It is difficult to understand at this stage what the EU mean by mandatory separate collection, since this may be interpreted as either 'separate from residual waste' or 'separate from materials of a different type or nature.' The modelling should therefore examine the difference between those two outcomes at a high level.

5.6.3 The recent requirements on collection authorities to examine the need for a range of separate collection arrangements (TEEP Regulations) has only recently been introduced. For the JWDAs the initial assessment has supported their existing systems of collection (a mixture of kerbside collection and commingled collections with mechanical sorting) by demonstrating that the cost (both capital and operational) of shifting to separate collection are very high, and the benefits of recycling are negated by additional transport emission . This cost and benefit analysis could be used by the study to establish the overall cost/benefits of a more aligned English collection system.

5.7 Modelling the impact of limiting incineration to non-biodegradable and non-recyclable waste

5.7.1 The text adopted by the European Parliament is very difficult to interpret at this stage, particularly with reference to what they mean by 'non-recyclable'. Non-biodegradable is a narrower definition although there are numerous different ways to define this (e.g. gas released loss on ignition test, waste composition). The national current biodegradable waste targets are based upon mass balance and make the assumption that 68% of municipal waste is biodegradable based upon waste composition. A material, however, may be inherently 'non-recyclable' or become 'non-recyclable' because it is contaminated or mixed with other wastes.

5.7.2 Without further clarification it is difficult to determine the starting point, or usefulness of any modelling exercise. However, removing biodegradable waste plus any commonly recycled materials is going to leave very little that is burnable other than some plastics. Therefore modelling could be undertaken under a very broad assumption that incineration will be reduced to around 10%.

5.8 Modelling the impact of limiting landfill

5.8.1 There is little indication from the adopted parliament text regarding the landfill limit. However, the previously adopted proposals had a staged approach, which suggested a ban on certain recyclables (plastic, metals, glass, paper and other biodegradable wastes) by 2025, alongside an overall 25% limit, then further reducing the overall limit to 5% by 2030. In the absence of any clearer indication then financial impact should be modelled on these assumptions.

6. Understanding the wider impacts

6.1 Clearly, delivery of new European targets is highly likely to cost more, but as set out in 2.6 it is more likely that less money will be available. A larger funding gap would inevitably lead to wider questions regarding the way local authorities and industry operates and whether there is better way of doing things. Local authorities are actively seeking new ways to deliver services but it is not always clear as to the extent that these changes deliver savings. A significant proportion of local authorities, for example, outsource waste collection services but this doesn't always lead to cost saving with some reverting back to in-house collections. Alternative models of delivery being discussed at various levels include those listed below. Some of these are directly in the control of local authorities, but other require active engagement of central government to bring about the relevant legislation changes that can help local authorities to reduce costs:

a) greater funding flexibility including changes in legislation to allow charging for services e.g. residual waste, schools, HWRCs;

b) partnership working – merging management, back office or front-line services;

c) use of technology and information – electronically tagging bins to deliver personalised communications, targeted enforcement, direct charging;

d) stronger legislation framework;

e) integration of services e.g. work with troubled families dealing with all aspects of council interaction;

f) joint commissioning or procurement;

g) national and regional harmonisation of waste collection and treatment systems

h) national material exchange for recycled materials;

i) out-sourcing, joint-ventures or local authority owned companies;

j) revisions to the producer responsibility schemes (PRNs, WEEE compliance);

k) moving from voluntary (Courtald commitment) to compulsory retail commitments to address supply chain issues; and

l) including waste in the devolution model, including the link between JWDAs and Combined Authorities where they exist in the same geographical area;

m) shared collection e.g. a joint food waste collection service;

n) shared infrastructure e.g. sharing of depots between districts;

o) share service provision e.g. specific roles, services, staff;

p) designing services to reduce waste and cost e.g. three weekly collections, specific charging.

7. JWDA Recommendation

7.1 A policy position, expected to be formally agreed by the JWDAs in the near future, is provided at Appendix A. These views have been determined as a result of the JWDAs experience in delivering sustainable waste strategies, which have put England on the right path to meet waste recycling and diversion targets in 2020. However, there is a knowledge vacuum within which decisions are being taken regarding future waste management targets, which lack any real-world analysis of the technical and financially viability of achievement. A better understanding of the potential impact of forthcoming EU proposals is therefore required to support policy makers, and those that will need to react to them. Subject to formal approval by each JWDA the Group, will therefore commission a study based upon the broad assumptions in section five above regarding the forthcoming legislation changes.

Appendix A: JWDAs Recommended Policy Actions

ISSUE	POSITION
Waste prevention and reuse	• needs greater EU focus as represents the waste hierarchy priority • needs to be tackled predominantly at the design and production phase • pursuing recycling targets can work against waste prevention by encouraging waste generation • the role of local authorities is limited to education, community engagement and access to raw materials
Packaging	• reduce excessive packaging • better designed PRN system to only reward where the material has been recycled • use product benchmarking to actively investigate and ban excessive packaging • deter the use of packaging for marketing and product enhancement e.g. black plastics • develop a standard declaration for recyclability linked to viable markets to encourage materials to be designed to be recycled, and greater level of clarity as to what local authorities should collect and how packaging can be labelled to reduce confusion
Product and service design	• regulation to require design improvements to facilitate longevity, reuse, re-manufacture and recycling e.g. Standard Environmental Product Declaration, Eco-Directive focused material use • where single use / disposable products cannot be avoided they should be easier to recycle or designed to maximise their potential for energy recovery • single use tax should be encouraged to reduce environmental damage e.g. successful example of plastic bags • new business models required which promote buying a service rather than owning a product • support new business models by tax breaks, financing schemes for products that are accompanied by lifetime guarantees, design life product support, software led longevity, provision of specific parts e.g. replacement screen, service packages, design for disassembly, device/product service packages, targeted removal of resource intensive parts • develop a reuse/disassembly compliance scheme to overcome split incentives between those involved in design and repair • promote access to information – requirement to disclose information on product disassembly and list of materials within products
Producer responsibility	• need extended Producer Responsibility (PR) to ensure that Producers provide a greater contribution to the cost of managing end of life products and recovering resources and are incentivised to design for longevity, reuse and recycling

	• local authorities (LAs) are currently subsiding inefficient UK plc resource use and can ill afford to continue to do so • PR schemes should cover the cover the cost of collection as an absolute minimum requirement • greater transparency of investment from PR funds into waste management and resource recovery infrastructure is required • ensure the cost of joining a producer responsibility scheme is based on the environmental damage (not sales volume) • link the cost to the lifespan, reusability or recyclability of a product not just the sales volume • tax virgin materials, and tax breaks or exemptions from PR compliance fees for recycled content
Procurement and supply chains	• sustainable public procurement can stimulate behavioural change in suppliers and act as 'champion' for greener procurement • improved information flow through supply chains supports better awareness between designers, manufacturers, retailers, waste managers and reprocessors e.g. the RSA 'Great Recovery' project which brings different parts of a product chain together to facilitate improvements in design to support reuse and recycling and development of the circular economy • product innovation tends to be quicker than waste management innovation. Measures to improve communication, awareness and joint working across the supply chain are encouraged • make the provision of information by suppliers mandatory and require collation of data on the environmental impact of individual products not just company performance • LAs should engage more actively with the supply chain, especially with retailers due to their direct influence on consumers and pivotal role in the supply chain • increase the focus on retailers as the intermediate between consumers and the manufacturer by building on the Courtald Commitment to develop a stronger initiative and considering the potential for a compulsory scheme • support retailers to make better decision by requiring suppliers to provide product specific environmental information • legislate good practice in supply chain management e.g. audits, benchmarking, flow of information, environmental scorecard, matrix, supply chain product mapping • support WRAP's continued work with retailers to address products and supply chain waste, but shift towards a mandatory scheme
Waste Definitions	• a consistent EU approach to calculation methods should be agreed so the current position is more fully understood before considering the future direction • faster process for removing regulatory burdens rather than relying on case law • set up grades for secondary raw materials to increase market confidence • ensure consistency of definitions of waste across Member

	states • improve provision of information between suppliers of waste and end-users • do not de-regulate waste at the expense of environmental protection
Recycling targets	• recycling targets should not be increased without supportive cost:benefit and life cycle analyses and without identified funding to support increased collection and sorting activities. • the marginal carbon benefit of delivering higher recycling targets should be considered against investment in alternatives e.g. solar power • poorly designed recycling targets can impede waste prevention • material specific targets that take into account feasibility, carbon benefits, and resource scarcity are a better approach than increasing the municipal recycling rate above 50%, which is not supported in current market conditions. Such targets should support and contribute to the achievement of long term carbon reduction targets looking ahead to 2030 - 2050 • targets should be achievable, but what is achievable will vary across EU Member States due to different waste flows; again, product specific targets/capture rates would overcome this • recycling targets should be based on material type rather than the source of material to encourage joint treatment of commercial, industrial and household waste • accepting recycled Incinerator Bottom Ash Aggregate (IBAA) in the official recycling calculation would better represent the proportion of recovered material returning to economic use in line with the EU Waste Framework Directive definition of recycling • incorporating IBAA would allow LAs who have invested in landfill diversion through EfW to increase recycling performance at no additional cost • there needs to be a sensible and flexible balance between recycling and energy recovery reflecting both affordability of treatment methods, market needs (resources v energy) and relative carbon benefits. The 'bang for buck' of every Euro invested into the circular economy needs to be maximised • there is little point collecting materials for which there are no markets, which simply lead to higher waste management costs and increased likelihood of contamination • recycling targets driven by incineration taxes, landfill taxes or bans create a market distortion since it leads local authorities and waste management companies to accept the widest range of material at lowest cost (thus avoiding landfill/incineration costs) thus focusing on volume over quality • over-arching targets will not tackle barriers to recycling which stem from design and supply chain interaction
Participation	• increased participation could be supported by more comprehensive communication and engagement programmes funded by PR • shift to reduced residual waste collection frequency and relatively higher collection frequency for recycling. Recent WRAP research suggests an increase in weekly residual

	capacity from 120 to 240L reduces recycling rates by 7.9% • improved powers giving local authorities the flexibility to direct householders as to what material is place in which containers, and better enforce where appropriate • abolish the 'public nuisance test' under section 46 powers • increased PR funded support for engagement with Housing Associations, landlords, businesses to ensure opportunities available for residents and customers to recycle • greater clarity of landlord responsibilities, and allow wider use of landlord licensing by removing areas specific constraints
Food waste – separate collection and diversion from landfill	• diversion of food waste from landfill is supported but decisions on the most appropriate treatment, e.g. separate collection for AD or inclusion in residual waste for EfW, should be taken locally based on local considerations including cost, social and environmental impacts • a managed withdrawal from landfill is supported by diversion of food waste and residual waste to alternative treatment technologies • an approach utilising a mix of targets and incentives set over a medium – long term timescale can provide the signals the waste sector requires to adapt, change practices and develop new infrastructure to effectively drive material away from landfill without requiring bans, incurring sudden shocks or risking long term investments in infrastructure • a specific requirement to separate food waste for recycling can only be accepted if the requirement is matched with the necessary funding to support collection and treatment infrastructure • revisit animal-by product regulation to reduce compliance costs for food waste treatment and encourage the use of animal feed
Markets for Secondary Materials	• it is imperative that markets for secondary materials are first developed before deciding how much material should be collected • further incentives placed on waste rather than markets (whether these are bans, taxes or recycling targets) will simply lead to more material being collected for which there is no market • the right behaviour needs to be financially rewarded in clearly visible way e.g. tax on virgin materials, exemption for compliance fees for recycled content • any new EU measures should complement, support and encourage action at appropriate geographic levels
Energy from waste	• strongly oppose any ban, limit or tax on incineration. • support the careful design of EfW capacity requirement to meet expected demand • energy recovery is the best option for some waste e.g. clinical wastes, offensive waste, hazardous wastes, difficult to recycle plastics or biodegradable wastes • EfW can provide a supply of secure and low carbon energy • local authorities should not be penalised for implementing waste policies which necessarily require investment over a

	long time frame • investment should not be discouraged by making dramatic, short-term changes to waste policy • specifically designing a material for energy recovery can have better environmental benefits that recycling in some circumstances where more energy is expended on several separation stages • carbon based life-cycle assessments often over-look the high degree of water usage involved in several cleaning or liquid-phase separation stages, which mean recycling is sometimes wrongly supported above energy recovery
Better technology	• support development and commercialisation of technologies to address specific bottlenecks e.g. PET tray recycling and plastic bags • narrowly focus EU grant funding towards projects with the greatest potential commercial benefit
Illegal activity and better enforcement of waste shipments	• illegal activity needs to be addressed prior to increasing recycling targets • consistent controls are required across the EU to make sure material is only exported to certified facilities and only materials actually recycled are counted towards targets • greater focus on closing down illegal operations before they have the opportunity to export by strengthening the link between exports and the permitting system through the use of end market specifications • greater focus on the export activity of poorly performing sites since these are more likely to seek illegal disposal routes
JWDAs regulation	• JWDAs lack the general power of competence of principal authorities. This is an issue that could potentially be addressed locally through the devolution agenda and in city regions through clarification of the relationship between JWDAs and Combined Authorities • the Waste Minimisation Act 1998 supports action by relevant authorities, including JWDAs, to reduce all wastes, not just household or municipal

REPORT ENDS