



Assessing the impact of Brexit on the UK waste resource management sector

Richard Cowell, Andrew Flynn, Nick Hacking

School of Geography and Planning, Cardiff University

15th July 2017

School of Geography and Planning
Cardiff University
King Edward VII Avenue
Cardiff University
CF10 3WA
UK

Legal Notice: Responsibility for the information and views set out in this paper lies entirely with the authors.

Executive Summary

As the UK begins to leave the European Union, it heralds a period of significant uncertainty for environmental governance. In few sectors are the potential impacts as profound as in waste and resources, where forty years of EU action have helped transform waste treatment in the UK from landfill-based disposal towards greater recycling and tighter environmental controls.

The aim of this briefing report is to spark debate about the potential effects of Brexit on future policy directions in the UK waste and resources management sector. It seeks to move beyond the simplistic categories of 'soft' or 'hard' Brexit, to foster more considered reflection on the potential policy pathways arising from leaving the EU, and the factors that could shape their emergence.

Potential change has multiple dimensions. There is the legislative dimension, recognising that 'EU policy' for waste and resources embraces a wide range of activities, some connected to trade some less so, which may be affected differently by the UK's renegotiated relationship with the EU. Cutting across this is the territorial dimension, especially devolution, raising questions about the spatial reach and consistency of future waste policy. Arguably most important is the substantive dimension: how should environmental and economic concerns be reconciled in the setting of policy goals?

Just because the future is uncertain does not mean that future policy will be written on a blank sheet of paper. Actors already in place and the narratives already circulating are likely to affect future policy. In terms of actors, government at UK, devolved and local levels is very important, with the waste-related responsibilities of local government already being delivered in the shadow of austerity. Corporate actors in the waste and resources sector could be a force for continuity, with infrastructure to sustain and contracts to uphold. Surrounding these parties are a more diffuse set of actors: businesses that may be encompassed within moves for 'producer responsibility' for waste, NGOs and the wider public.

In terms of narratives for change, two main arguments have been in circulation leading up to the Brexit process. There is pressure to further develop the 'circular economy', centred on adoption of the EU's Circular Economy Package (CEP) of legislation and other measures, pushing towards further reductions in landfill, increases in recycling rates, and designing out waste. Set in potential opposition are narratives representing Brexit as an opportunity for deregulation, with the CEP proposals argued to be too expensive, unachievable, and

benefiting from replacement by measures better supporting domestic economic competitiveness.

The briefing sets down three post-Brexit waste and resources policy scenarios:

A) *Tracking the EU*

This scenario assumes that once the 'leave' process is complete UK waste and resources policy continues to track closely that of the EU, including those in the CEP. This scenario will be reinforced should the CEP measures become transposed into UK law while Brexit is negotiated, but other factors would also support it, i.e. where strong advantages to trade are identified from the UK remaining compatible with EU standards. Working against this scenario is that the UK will lose scope to influence the future development of EU policy, and there are critics of the economic viability and desirability of following the direction of the EU.

B) *Flatlining, fragmentation and regression*

This scenario takes on concerns that Brexit will herald a period of limited and declining ambition in UK environmental policy and considers how they might unfold for waste. Reinforcing this prospect are: deregulatory arguments challenging the costs of CEP-type measures and fostering a disinclination to mandate extended producer responsibility for waste: a future in which central government interest in waste policy is limited, shifting more responsibility to local authorities but with fewer resources. Working against this scenario are pressures for cross-national regulatory consistency emanating from intra-EU waste-related trade or international movement. Various factors militate against a major return to landfill, but domestic incineration/energy-from-waste may be boosted as a convenient solution to disposal problems.

C) *Diverse green shoots*

Here Brexit is a catalyst for new waste and resource policies that take UK practice further 'up' the waste hierarchy, possibly beyond the goals of the CEP. One factor reinforcing it would be the intensification of '*national* resource security' narratives, arguing that UK economic competitiveness needs a high quality circular economy operating within national borders, though it faces challenges based on costs and conflict with the idea of a post-Brexit UK becoming a 'beacon for global free trade'. Public and NGO pressure for better waste management will be important, as seen around types of plastic waste. Devolution may also reinforce this scenario, in that the devolved governments of Wales and Scotland have used their powers in the waste field to outperform England. Key questions concern the governance

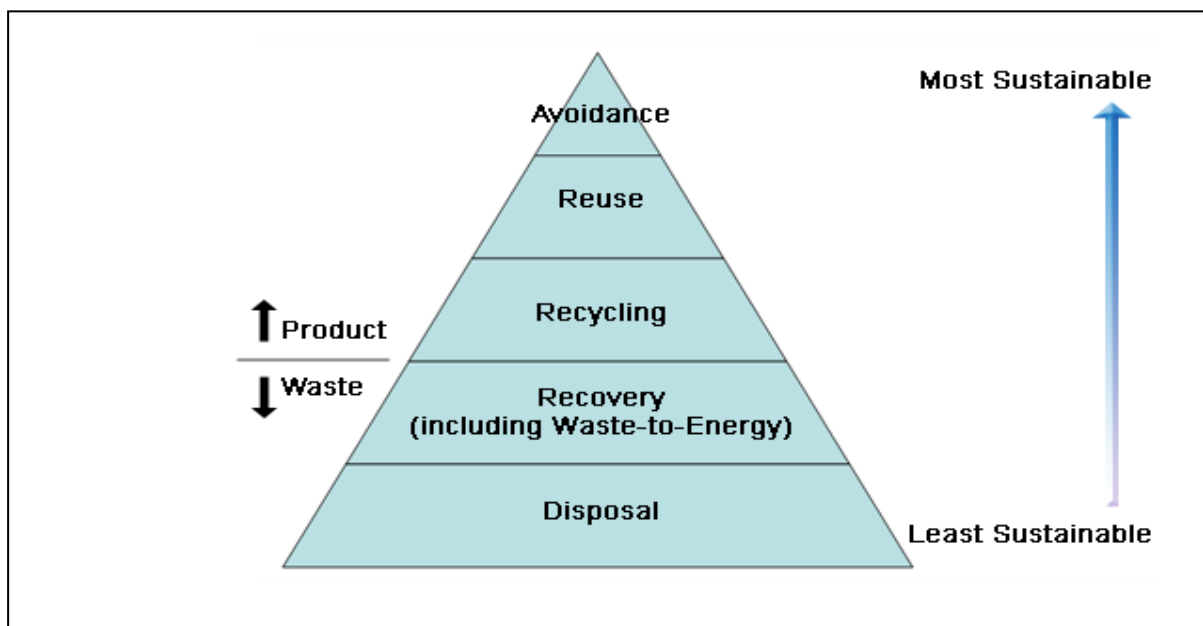
mechanisms or economic leverage by which devolved government practices 'bid up' policy in England.

The scenarios are not predictions, but they push us to confront important issues facing waste and resources policy, post-Brexit. The analysis has sought to open up the multiple dimensions of change, and highlight that understanding persistence can be equally useful. Across our scenarios, three more fundamental questions emerge as deserving of attention:

- *What is the public value of regulation?* Deregulatory pressures surround the Brexit process but economic opportunity in the waste sector is defined by government action.
- *Does voluntary business action take us to sustainability?* This question is especially relevant to extended producer responsibility.
- *Territorial coordination – but with whom, how, and at what level?* Given devolution, the issue of how best to reconcile environment and economy has a territorial, political dimension.

1.0 Introduction

On June 23rd, 2016, the British public voted to leave the European Union (EU), thus triggering a period of unprecedented uncertainty for the way that environmental problems are governed in the UK. In few areas of environmental policy could the potential changes be as profound as waste. Since the EU's first interventions in this field in the 1970s, the management of waste in the UK has been transformed: as an accumulation of legislation and policy helped to drive the reduced use of landfill, tighter environmental protections for handling various categories of waste, and promote re-use of the resource content. In particular, EU legislation has helped to institute the idea of a waste 'hierarchy' (EC, 1975, EC, 2008) in which disposal by landfill is to be minimised in favour of solutions higher up the hierarchy (see Figure 1). More widely, the field of 'waste disposal', an end-of-the-pipe activity, has been reformulated as a more multi-dimensional field of resources management.



source: WTER (2017)

Figure 1: The EU's Approach to the Waste Hierarchy (EC, 2008)

EU membership is also seen as combining the prospects of continued improvements in waste management policy with relative stability and consistency in institutional arrangements, within the UK and beyond. As the UK Government begins the 'Brexit' process, all this seems under threat and many in the waste sector have been anxious at the prospect (Jennings, 2016, Messenger, 2016, Moore, 2016).

This briefing report aims to spark debate about the potential effects of Brexit on future policy directions in the waste and resources management sector in the UK.¹ It responds to the paucity of consideration given to environmental issues generally in the run-up and aftermath of the EU referendum (and the June 2017 General Election, Jordan and Gravey, 2017), and to the often simplistic way in which debate is conducted. Most debate about the UK's post-Brexit future has been dominated by three scenarios, characterised as: i) a 'hard Brexit' where the UK loses access to the Single Market, ii) a 'soft Brexit' where the UK stays within the European Economic Area (EEA), and iii) an 'à la carte Brexit' where bilateral agreements would dominate future trade relations between the UK, Europe and the wider world (which is considered unpalatable to the EU, see Simon, 2016, Filgueria, 2016). This apparently neat set of choices has informed an often polarised political debate as to whether Brexit is wholly good or wholly bad. There is a need to foster more careful thinking about the array of potential policy pathways for waste policy arising from leaving the EU, and the conditions that are likely to shape which pathways actually emerge.

This briefing has four further sections.

Section 2 identifies the multiple dimensions of change that might unfold: legislative dimensions (the array of EU legislation affected), territorial dimensions (especially devolution), and substantive dimensions (what goals are pursued?). When change is considered as multi-dimensional, it becomes clearer that there is a complex array of policy pathways and directions of change.

While Brexit is often presented as an opportunity to think afresh about possible policy directions for the UK, in waste - as in many other areas – it is important to recognise that there are strong pressures for continuity. Thus, **Section 3** examines the key actors already heavily engaged in the waste sector, the key narratives used to justify or critique current policy trajectories, and the various other factors that tend to reinforce present approaches to managing waste. This enables reflection not just on whether particular future pathways for UK waste policy are desirable, but also which are more likely and why.

¹ We draw upon the ESRC-funded research project *UK Environmental Governance Post-Brexit: What Will Happen to Waste?* supported under the Cardiff University Impact Acceleration scheme. It has been conducted by researchers at the School of Geography and Planning, and involved documentary analysis and sixteen interviews with actors involved in waste and resources management. Interviewees are treated anonymously, cited in this document only by category of actor and date of interview.

This informs the approach taken in **Section 4**, where we outline scenarios for the future. **Scenario A**, 'Tracking the EU', involves seeking to align UK policy around EU-compatible objectives for waste, including the adoption of the Circular Economy Package of measures. Benchmarked against this, we consider two sets of variations. In **Scenario B**, 'Flatlining, Fragmentation or Regression', the governance of waste in the UK falters post-Brexit, and shows little overall movement of waste handling 'up' the waste hierarchy. In **Scenario C**, 'Diverse Green Shoots', the governance of waste in the UK, post-Brexit, takes new steps to improve environmental performance. For all three scenarios, we consider the factors that would influence their appearance, reinforce them, as well as factors militating against their emergence.

The rationale for creating these scenarios is not to predict the future, but to provide a framework for thinking about the diversity of possible scenarios. They also seek to extend thinking beyond hypothetically possible post-Brexit worlds, to highlight the factors that may 'lock in' policy development around particular paths (Unruh, 2000) and the tensions that could create instability. **Section 5** offers points of conclusion and sets out questions around which further feedback would be welcome (address given at end).

2.0 UK Waste Management - Key Dimensions of the Policy Landscape

In order to understand how the governance of waste and waste-related resources may develop in the UK after Brexit, we offer an outline of the different dimensions of the policy field, and how they intersect with the regulations and actions of the EU. These dimensions are organised into the following categories:

- **legislative dimensions**, referring to the different elements of EU-related policy applicable to the UK that might now become open to change,
- **territorial dimensions**, referring to the spatial scales at which waste and resources governance are and could be organised, and
- **substantive dimensions**, referring to the different perspectives on how environmental and economic goals should be integrated.

Thinking about these dimensions makes it clearer that the waste and resources policy landscape is complex and, by considering different combinations of these dimensions, that there are multiple potential future pathways of change. It also provides a framework for

evaluating the proposals for change currently being put forward by actors in the political, waste and environmental fields. Such proposals may give central and explicit emphasis to certain dimensions of change but may be silent about others despite potentially having profound implications for them. The partiality of various proposals – what is included and what is omitted – also becomes clearer.

2.1 Legislative Dimensions

Table 1 shows key elements of some of the 600 or so European policies and regulations which impact on the operation of UK waste and resource management (Interview, Listed Company 1, 15.3.17), from which a number of points can be taken.

Most immediately, it shows the breadth of coverage of EU-based policy and regulation, encompassing broad targets for disposal routes, procedural requirements and specific provisions for particular types of waste.² It is through this far-reaching set of interventions that the EU has sought – with some success – to push the handling of waste in Member States ‘up’ the waste hierarchy, away from landfill, towards forms of resource recovery and to encourage waste avoidance. In legislative terms, should the UK re-join the European Economic Area (EEA) then legal experts anticipate that the UK would need to still comply with the vast majority of these policies and regulations, as well as any future changes made by the EU, albeit with much less scope to influence their direction of change. If the UK’s Brexit arrangements entail not being members of the single market – which is the UK Government’s strategy at present (CUP, 2017) - then the policies and regulations applying to the UK become subject potentially to greater change.

Table 1 also shows that EU policies seek to govern waste in diverse ways. Some pertain to practices such as target-setting within Member States (e.g. for recycling), to which a post-Brexit UK outside the EEA might not need to comply. Others pertain to the standards that need to be met by materials that are tradable within and beyond the European Union, and would presumably still apply to UK organisations seeking to move waste and waste-derived products to/from the EU. Whichever Brexit route is chosen, it remains the case that regulation and markets intersect. Policy that seeks to regulate how waste hazards are handled can also have great implications for resource markets – the scope for and terms on which waste and

² We have not sought to be exhaustive. For example, there is no space to address the significant implications of Brexit for the governance of nuclear materials, which is caught up in the fate of the Euratom Treaty.

waste-derived resources can move around within or beyond what has been termed the EU's 'Schengen Area for Waste' (Kama, 2015, 19).

Table 1 also shows how aspects of EU policy build on international conventions and obligations e.g. the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. Thus, commentators have argued that, even outside the EU, the fact that the UK has ratified numerous international treaties means many environmental protection obligations will remain (see Macrory, 2017). However, international conventions are often simpler, less precise and, unlike EU legislation, most lack mechanisms for enforcing compliance and redress (HoL-EUC, 2017), whereas for EU policy national governments can be held to account through the European Commission and Court of Justice of the European Union (CJEU).

Leaving the EU has other cross-cutting implications for UK waste and resources governance. At present, the CJEU has an important role securing compliance with the Aarhus Convention.³ CJEU decisions have underscored the standing of environmental organisations in representing legitimate public interests and pressed the UK government on improving financial protection for those bringing environmental cases before the courts (Maurici and Moules, 2014), in the face of UK governments pushing deregulation agendas that diminish procedural rights (Cowell, 2017). Exit from the EU may also mean a loss of access to EU funding for projects that can support the delivery of waste policy.

2.2 Territorial Dimensions

Concerns about space and territory are integral to governance of waste and resources in Europe (cf. Bulkeley et al., 2005). As noted above, EU policy in the sphere has co-evolved with the formation of markets, by working to create common waste-related standards across member states, producing a level playing field and thereby allowing waste- and waste-derived resources to move across borders. This has allowed companies to exploit market opportunities in other member states, for example, exporting waste-related products like refuse-derived fuel (RDF) (Kama, 2015). Spatial dimensions of governance also inform concepts like the 'proximity principle', designed to inculcate ideas of responsibility and control risk, and also permeate international agreements that regulate longer-distance

³The UN Convention on Access to Information, Public Participation in Decision Making Access and Justice in Environmental Matters

Table 1: Key Features of Selected EU/UN Legislation for UK Wastes Management Sector (by date)

Relevant Legislation / Regulation / Convention / Institution	Wastes Management Parameter
Waste Framework Directive 75/442/EEC	Introduce the waste hierarchy into European waste policy and emphasize the importance of waste minimization, the protection of the environment and human health.
Sewage Sludge Directive 86/278/EEC	Encourage the use of sewage sludge in agriculture and to regulate its use in such a way as to prevent harmful effects on soil, vegetation, animals and man.
Batteries Directive 91/157/EEC, Batteries Directive 2006/66/EC	Minimise the negative impact of batteries and accumulators and harmonise their market requirements.
Waste Shipment Regulations 259/93/EEC, Regulation (EC) No. 1013/2006 (UN's Basel Convention).	The Proximity Principle and shipments of hazardous waste.
Directives 94/62/EC & 94/137/EEC on Packaging and Packaging Waste, Directive 2004/12/EC, Directive 2005/20/EC, Ecodesign Directive 2009/125/EC, Regulation (EC) No 219/2009, Commission Directive 2013/2/EU, Directive (EU) 2015/720	Reducing Upstream Waste
Integrated Pollution Prevention and Control (IPPC) EEC/96/61, Integrated Pollution Prevention and Control Directive (EC, 2008), Environmental Impact Directive 2011/92/EU	Using Impact Assessments to Mitigate the Impact of Future Waste Activity
Directive 96/59/EC, Regulation (EC) No 850/2004 on persistent organic pollutants	Safe disposal of Polychlorinated biphenyls (PCBs) and polychlorinated terphenyls (PCTs)s
UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)	Grants the public rights regarding access to information, public participation and access to justice.
Landfill Directive 99/31/EC	Avoiding Landfilling
The Protocol to the regional UNECE Convention on Long-Range Transboundary Air Pollution (CLRTAP) (2003), The global Stockholm Convention on POPs, Regulation (EC) No 850/2004 on persistent organic pollutants	Reducing the negative impact of Persistent Organic Pollutants (POPs)
End of Life Vehicles Directive 2000/53/EC	Increasing Recovery, Reuse and Recycling from Used Vehicles
Waste Incineration Directive (WID) 2000/76/EC, Industrial Emissions Directive 2010/75/EU, Registration, Evaluation, Authorisation & Restriction of Chemicals (REACH) 1907/2006	Reducing Environmental and Human Health Risks from Waste Activity
Ozone Depleting Regulations 2037/2000	Reducing Ozone Depletion from Waste Activity
Referrals to the Court of Justice of the European Union (CJEU)	Enforcement
WEEE Directive 2002/96/EC, WEEE Directive 2012/19/EU	Recovery of waste electrical and electronic equipment (WEEE)
RoHS Directive 2002/95/EC, RoHS recast Directive 2011/65/EU	Restricting the use of hazardous substances in electrical and electronic equipment
Waste Framework Directive 2008/98/EC	Recycling, reuse and/or reclamation. Conservation of natural resources. Promotion of energy efficiency via Energy-from-Waste (EfW). Reduce non-hazardous construction and demolition waste. Restricting hazardous waste shipment.

Table 2: Matrix for Legislation, Territory and Substantive Aims in the UK Wastes Management Sector

	EU Level	UK Level		
		England	Wales	Scotland
Directives, Statutes and Guidance	Landfill Directive 99/31/EC (EC, 1999)	Landfill, England and Wales, Regulations (OPSI, 2002). Environmental Permitting (England and Wales) Regulations 2010 (OPSI, 2010)	Wise About Waste (WAG, 2002)	Landfill (Scotland) Regulations 2003 (OPSI, 2003)
		Environmental Permitting Guidance - The Landfill Directive (DEFRA, 2011)		
	Waste Framework Directive 2006/12/EC / Waste Framework Directive (Amended) 2008/98/EC (EC, 2008)	Waste (England and Wales) Regulations 2011 (OPSI, 2011) Waste (England and Wales) (Amendment) Regulations 2012 (OPSI, 2012)	Towards Zero Waste (WG, 2010)	Guide to Waste Management Licensing (SEPA, 2009) Waste (Scotland) Regulations 2012 (SG, 2012)
	Circular Economy Package – amending Directives (pending)	Waste Management Plan for England (DEFRA, 2013)		Zero Waste Management Plan for Scotland (SG, 2012)
		Uncertainty		
Aims	Landfill Directive: Encourage downstream resource recovery and recycling. Marketise waste streams.	Comply with Landfill Directive targets	Exceed Landfill Directive targets	
	Waste Framework Directive: Provide a definition of waste and revise and strengthen the waste hierarchy framework.	Comply with Waste Framework Directive targets	Exceed Waste Framework Directive targets	
	Circular Economy Package: Encourage upstream activity to reduce waste production.	Uncertainty		
Responsible Actors	Directorate-General (DG) Environment & European Environment Agency (EEA)	Department of Environment, Food and Rural Affairs (DEFRA), Department for Business, Energy and Industrial Strategy (BEIS), Environment Agency (EA), WRAP	Environment and Countryside (Welsh Government), Natural Resources Wales (NRW), WRAP Cymru	Environment, Climate Change and Land Reform (Scottish Government), Scottish Environmental Protection Agency (SEPA), WRAP

transfers (Sora, 2013).

But Brexit itself is also fundamentally a territorial issue in that it is propelled by constituencies in the UK that regard supra-national government like the EU as an undesirable infringement on Parliamentary sovereignty, and seek to reassert the primacy of national interests. Such pressures could encourage greater national autarky in waste and resources management policy, with implications for markets operating at EU-scale. The territorial dimensions of policy can be contested. Even if different actors subscribe to the idea of a 'circular economy', they may not necessarily share the same views of the territory within which this circularity should be constructed, or of the legitimacy of 'leakage' of waste and related resources beyond that space (Kama, 2015, Gregson et al., 2015).

Numerous questions arise. To what extent is consistency across space important? At what scale should governance processes operate, for which aspects of waste, and by what procedures should policy be agreed? Devolution is pivotal here. Within the UK, the allocation of environmental powers to the devolved nations has allowed some divergence of policy and practice in the waste sector between the four constituent territories of the UK, with EU policy providing an overarching framework. In Northern Ireland the permeability of the border with the Republic has facilitated large-scale waste movements between the nations. Wales has witnessed particular success in reaching a national 62% recycling rate compared to England's 42% (Resource, 2017). Welsh and Scottish governments have expressed concern that Brexit might throw devolution into reverse should Westminster efforts to construct the UK as a "great, global trading nation include more assertive intra-UK regulatory consistency. Such territorial dimensions of Brexit need considering in relation to the different legislative dimensions of waste policy discussed above. It may be regarded as permissible that devolution leads to divergence around target setting, but not concerning the standards and waste definitions that allow materials to be traded at a wider scale.

2.3 Substantive Dimensions - Environmental and Economic

Much of the discussion about Brexit has been dominated by legal and political discussion of powers, e.g. who controls what at what scale? (Filgueria, 2016, Gee and Young, 2016, Hunt et al., 2016). This can eclipse the question of towards *what goals should waste and resources policy be directed?* Should Brexit leave UK governments less beholden to EU objectives, so fundamental questions about goals become more up for discussion (Burns et al., 2016). A key

axis is how balances are struck between environmental and economic concerns, for which goal setting can be conceptualised in three broad ways:

1) Ecologically-driven goals emphasise the need to govern waste and resources in ways that progressively diminish the impact on the environment (in terms of reduced consumption of resources, of the energy or water needed to process them, or the use of land/water/air as waste sinks). Advocates often argue that such impacts should be reduced as low as possible, reinforced by strong concerns for the precautionary principle (i.e. low tolerance of environmental risks), for designing out waste, and for handing future generations a robust stock of 'environmental capital'. Goal-setting may focus on physical fluxes of materials and energy rather than flows of money, being characterised by setting progressively tighter goals for reducing certain kinds of activity e.g. for reducing disposal of waste to landfill.

2) Eco-efficiency driven goals emphasise that the balance between environmental goals and economic objectives should be 'optimal' in some sense, by recognising that adverse environmental impacts have costs but so too do the various approaches to managing them. Advocates may be sceptical about goals seen as specifying 'means' (e.g. recycling) rather than ends, arguing that they risk funds being allocated sub-optimally. In some formulations, consideration of what is economically optimal is deemed an appropriate way of identifying policy goals ('ends'); in others, markets are emphasised as means for efficiently achieving ends that are based on other knowledge (e.g. science). Linked to these positions is a faith in markets and in the scope to monetise costs and benefits to help determine policy solutions.

3) Short-term economic-driven goals emphasise private profits and the reduction of costs to public and private sectors in the short-term, and challenge interventions that interfere with either of these goals. In various libertarian formulations, such perspectives may be opposed to government intervention in private affairs *per se*. Justifications of such positions also often entails downplaying environmental risks and/or playing up any uncertainty in knowledge about environmental risks.

Cutting across these ideal types, it is important also to note that as well as environmental objectives and targets, the waste sector also requires infrastructure investments to deliver on those objectives. It is thus perfectly conceivable for industry bodies to advocate that the kind of infrastructure investment required to meet (more ambitious) environmental outcome targets for waste management – such as energy-from-waste or recycle-processing facilities -

requires more flexibility in other rules governing the environmental impacts of those investments (see ESA, 2017). Whether such investments materialise may of course depend on the wider state of the economy, post-Brexit.

2.4 Summary

Overall, one can see the diverse array of potential intersections between legislative, territorial and substantive dimensions of change. Table 2 above displays the potential complexity of post-Brexit policy change for a small section of waste and resources legislation. Policy aims are set against the legislative tiers involved (from the EU to the UK nations). The grey areas, however, show the current areas of policy uncertainty regarding pending EU legislation under the Circular Economy Package. As the next sections explain, one can also begin to discern how prospective post-Brexit pathways may combine contradictory positions.

3.0 Drivers for Change: Actors and Narratives

The path through Brexit and beyond is routinely presented as one of profound uncertainty and risk but also of opportunity, especially to develop new, 'more UK sensitive' approaches to public policy. Acknowledging this does not mean, however, that the Brexit process marks a straightforward breakpoint in waste management history, or that the UK faces a future policy world of infinite choice to be inscribed onto a blank sheet of paper. An alternative perspective is to acknowledge key elements shaping possible futures that are already in place. Analysts of the way that societies 'transition' to sustainability might go further, and question whether Brexit, of itself, would or should affect the 'lock in' to particular waste management pathways (see Corvellec et al., 2013, Unruh, 2000). One element is the likely persistence of the policy and regulatory institutions discussed above. Two others are the actors involved and key narratives for change already in circulation, considered in turn below.

3.1 Actors in the waste and resources sector

The waste and related resources sectors are constituted by a diverse set of actors, which one should expect to be impacted by the Brexit process in different ways.

There are government actors with roles in the governance of waste at all tiers of the political system, from EU to national, national-devolved and local-government level. Such hierarchical tiering, however, obscures the fact that there can be immense variations at any given level in terms of the approach to waste. As noted above, the devolved governments of Wales and Scotland have used their powers over aspects of waste policy to pursue higher targets for recycling than national norms. Meanwhile, the Westminster government, responsible for waste strategy in England, has been criticised for doing little since 2010 to set any strategic direction. It is at local government level that contracts for the collection, recovery and disposal of certain kinds of waste are arranged and planning approval for waste management facilities is given. 'Average recycling rates' belie huge variations between authorities.

Across the public sector, coping with austerity remains a significant issue, especially for local authorities, though with divergent implications for waste and responses to Brexit. Some local authorities have pushed up recycling rates to a level that enables reduced collections of residual waste such that moving out of landfill becomes cost effective (Interview, Sustainability Consultant 1, 13.3.17). Others, as outlined below, may see Brexit precisely as an opportunity for loosening target-based controls to shift money from waste to other pressing local policy areas.

Corporate actors are critically important but fall into two broad sets. The first set is those businesses that derive income from the collection, management and sale/disposal of waste, a sector that includes major national and, increasingly international organisations. For such actors, Brexit is not necessarily the major challenge to their operations though it is a potentially destabilising factor. Waste policy uncertainty in England was already an issue, to which the EU referendum and its aftermath simply adds another layer.

More significant for many has been the economic situation around the sector which, with the policy vacuum in England, creates a difficult context for investment (Interview Financial Investor 7.3.17; Interview, Listed Company 15.3.17). The effects of the economic downturn between 2008 and 2013 included a decrease in the amount of waste to be managed, resulting in lower gate fees that can be charged for managing that waste (Dick et al., 2016, Howard and Galloway, 2017) causing a financial contraction. The 2008 crash also precipitated reduced council spending, as above, and a wider downturn in commodity prices that in turn damaged markets for recyclates because it reduced the costs of raw material-based alternatives (e.g. oil as a feedstock for plastic).

Corporate actors in the waste and resources sector and their assets can be a force for continuity in management practices. They operate infrastructure – incinerators, collection and recovery plants – that require flows of input and output material to maintain viability. Sunk infrastructure can itself greatly structure the scope for change in the waste sector (Corvellec et al., 2013), such as the availability and cost of incineration capacity and the remaining availability of landfill. Also ‘bridging to the future’ through the Brexit process are contracts, for example to export RDF to continental Europe (Holder, 2016).

The second set of corporate actors is more diffuse and their goals harder to map. It is the myriad businesses, manufacturers and retailers whose activities may generate waste and who need to be engaged in thinking about how their waste arisings can be reduced or managed if stricter environmental targets are to be addressed. This is the agenda of ‘producer responsibility’. Some businesses may see opportunities to attach value to waste management solutions like waste take-back because they exemplify corporate social responsibility, generate reputational gains and secure control over a stream of resources. Others may be inclined to view waste management as a cost that they would seek to minimise, with Brexit perhaps providing an opportunity to persist with convenient disposal-based solutions.

Environmental non-governmental organisations are also important actors, and can be expected to make waste and resources policy the subject of campaigns, albeit likely to focus on aspects where particular problems have been identified (e.g. disposable coffee cups, plastics in marine environments). There are also various think tanks, for which one might argue that those on the right and centre-right of the political spectrum have become more visible since 2010. Key players in policy debates in previous decades but now absent, are the voices of the independent science-based bodies like the Royal Commission on Environmental Pollution (abolished) and watchdogs like the Sustainable Development Commission (ditto).

Publics are also important actors, as prospective co-producers of more sustainable waste management outcomes (e.g. sorting recycling, returning packaging), in responding to planning applications for new waste management facilities (e.g. for new incinerators), and – along with businesses – as actors that may be tempted to act in ways that encourage the illegal disposal of waste.

By looking at the actors involved, one can see how Brexit potentially affects the governance context in which waste management policy across the UK evolves, but not necessarily the immediate priorities or interests of all the actors. So rather than seeing Brexit as driving change, much depends on how the scope for policy change created by Brexit is exploited by

different actors. Indeed, historically, shifts in market activity and technological innovations by private companies have shaped waste legislation, not just policy (Interview, Listed Company 1, 15.3.17, Interview, Listed Company 2, 24.3.17).

3.2 Narratives of change

In thinking about whether or how waste policy might change as the UK emerges from EU membership, it is reasonable to assume that arguments already in circulation will be brought to bear. Two are discussed here:

EU-led narratives for a circular economy

EU policy will continue to change and evolve alongside the Brexit negotiations and, for the waste sector, the main subject here is the final stages of agreeing 'The Circular Economy Package'.

Circular economies can be characterised as promoting 'cradle to cradle' approaches to product life cycles (Gregson et al., 2015), in which the use of primary resources is minimised, any wastes are collected rather than disposed of and, as far as possible, re-used in some way. A key proponent of the circular economy concept, the Ellen MacArthur Foundation (EMF) has defined the circular economy, stating that it should be "restorative and regenerative by design. Relying on system-wide innovation, it aims to redefine products and services to design waste out, while minimising negative impacts" (EMF, 2017).

In 2012, the European Commission (EC) adopted a manifesto on the circular economy. Based in part on the EMF's advocacy, the document's signatories aimed to commit the EU to developing a 'regenerative circular economy' (EC, 2012). To deliver a transition towards a circular economy, the Commission has been developing a series of measures – some involving legislation, some not – collectively referred to as 'the Circular Economy Package – which signals a further impetus for improving waste collection rates, closing industrial cycles and restricting exports beyond the EU's borders (Kama, 2015). The proposals include targets to increase municipal recycling to 70% by 2030 and limit landfilling to 5% of municipal waste (EC, 2015, EP, 2017, Moore, 2017c). In addition, targets have been set for the recycling/re-use of packaging waste, with a raft of measures to foster better waste collection, preparation for re-use and prevention. The use of economic instruments such as pay-as-you-throw

schemes and taxes or levies on landfilling and incineration is promoted. Referring back to the discussion in Section 2.3, the goals could be regarded as ecologically driven.

The Circular Economy Package now only requires a common text to be agreed with the EU Council before it becomes law (Rosa, 2017). If adopted by the UK before the Brexit process is complete, the Package could significantly configure domestic policy for waste and resource management into the medium term. However, the proposals are meeting some resistance among member states in the Council (Moore, 2017b), and the UK waste and resources actors interviewed are currently contesting what will and should happen to the Circular Economy Package.

A further environmental narrative gathering momentum in the UK at the same time as the Brexit process surrounds food waste. Here, the public are often regarded as significant producers of waste (Dick et al., 2016), and statistics about the scale of the problem are a key element, viz. nearly 20% of the food that UK households purchase is thrown away; and of the 4.6m tonnes of food waste collected by local authorities each year only 12% is recycled (Dick et al., 2016). Typically, food waste is now portrayed as a lost resource: “Recycling ... food waste, either by anaerobic digestion or by composting represents the most sustainable way of extracting value ... In so doing, the food waste recycling industry delivers significant economic and environmental benefits to UK plc” (Georgeson in Dick et al., 2016, 3). Like the circular economy, reducing and recycling food waste is seen as mutually beneficial for the environment and the economy, as well as local government and the private sector.

Market-led Narratives for Deregulation

There is a set of narratives already circulating in the UK, arguing in various ways that ‘the market’ should be given freer reign, that seem well-placed to exploit the ‘policy window’ (Kingdon, 2003) created by Brexit.

Politically, Brexit can be seen as a victory for free market proponents, in the desire to cut regulation on business and more widely deregulate the economy. Such arguments were already resurgent prior to the EU referendum, at EU as well as UK level (Gravey and Jordan, 2016). Within the UK, EU legislation had been targeted by various ‘Red Tape Reviews’, with ‘red tape’ often taken to imply environmental regulation. However, although such general calls for deregulation continue to attract headlines as the Brexit process begins (Rayner and Hope, 2017), their traction is unclear, in general and around waste in particular. In the waste sector,

pro-market narratives have been deployed at a number of points to argue against government bureaucracy or 'red tape' (Davies, 2007). However, industry actors questioned the ability of this approach to transform the fortunes of the sector (Interview, Lobbyist, 17.3.17), not least because – as above – waste markets are constituted by regulation.

What has become more apparent in the wake of the EU referendum is the emergence and crystallising of narratives that are critical of the EU Circular Economy Package. These have a number of features: identifying Brexit as an opportunity for 'fresh thinking' or 'home grown' policy solutions for waste in the UK; arguing that increased recycling rates are 'unachievable', excessively costly or inappropriately based on weight; that the Circular Economy package fails to recognise the 'reality of the market', especially in terms of the limited marketability of (especially low quality) recyclates, and that policy has been driven too much by 'environmental agendas' and alternative approaches would better support economic competitiveness and productivity. Elements of these narratives have been propounded by some industry actors (FCC, 2016, FCC, 2017, Pennon, 2017, Baddeley and Vergunst, 2016, Taylor, 2017, Interview, Listed Company 2, 24.3.17), government ministers (Date, 2016), local government (Bird, 2017) and think tanks (Howard and Galloway, 2017).

However, proponents of such narratives often still support circular economy principles, but advance different ways in which UK interests could extract economic value from waste (Baddeley and Vergunst, 2016). Moreover, waste sector proponents of market-led narratives are not necessarily calling for deregulation but for clarity, vision and strategy at a time of distinct economic uncertainty, not least to firm up the context for investment.

4.0 Analysis: Post-Brexit Waste and Resources Policy Scenarios

4.1 In the short-term

With the Prime Minister triggering Article 50 on 29th March, 2017, over the ensuing years the Brexit process and its implications for waste and the environment are likely to be affected by a number of intersecting developments.

First, there is the progress of the Great Repeal Bill (now retitled the European Union (Withdrawal) Bill). In theory this legislation will bring all EU legislation and associated provisions into UK law at the moment that the UK leaves the EU. Moreover, Government ministers are keen to stress that the Bill will be policy neutral, facilitating transposition without adjusting substance. However, not all EU provisions can be straightforwardly transposed and there are tensions around the possible extension of Ministerial powers, with particular uncertainties around what will happen where aspects of policy had previously been devolved, as in waste (HoL-EUC, 2017).

Secondly, there is the direction of the EU exit negotiations themselves. The UK has thus far been advancing a position that entails regaining control of EU migration and, concomitantly, not pursuing membership of the EEA and Customs Union. Assuming this is the outcome, then the position is that the UK will no longer be bound by EU rules on waste once it has left the EU. Few commentators expect that waste policy, or environmental governance generally, will feature prominently in these discussions, though there is the potential – as yet untested - for compliance with EU policies to be part of some wider agreed arrangements.

The third important development for waste policy over the period 2017-2019 is the parallel progress of the EU's Circular Economy Package of new legislation and other measures. Commentators disagree on whether this will be both completed and passed before the UK completes the Brexit process (Ogleby and Mace, 2017, Ogleby, 2017). There is also uncertainty as to whether the contents of the Circular Economy Package will be transposed into UK law, perhaps because it is automatically swept up in the Repeal Bill process, or whether the UK government will act to ensure that it does not have to implement this legislation.

In addition to the above, there is the question of how environment and waste issues feature in any trade agreements that might be developed (if not finalised or implemented) in parallel with the Brexit process.

The above four developments focus essentially on regulatory matters, but cutting across them is the question of how will the Brexit process affect the economy? There could be further effects on sterling, the lending environment and GDP, which feeds into the volumes of materials to be handled, capital and labour costs, and the scope to raise funds for investment. Uncertainty is an issue in itself, hence the desire by the sector for clear government strategy on waste and resources. For business actors in the waste sector, these economic issues are arguably more important than the minutiae of Brexit negotiations themselves.

Given the uncertainties above, predicting the future direction of policy is regarded by many in the waste sector as an impossible exercise. Thus the scenarios below are not offered as predictions but ways of thinking about the prospects for change, about the different dimensions of change – legislative, territorial and substantive – and the factors that could pull things in different directions. As discussed above, given the different actors in play the future direction of policy is likely to be contested. Moreover, rather than focusing on change alone, it is equally important to consider the powerful forces for continuity that might ‘lock-in’ the organisation of waste to particular governance and management approaches.

4.2 Scenario A –Tracking the EU

This scenario assumes that waste and resources policy in the UK continues closely to track that of the EU, including the various elements of the Circular Economy Package. In this scenario, EU targets still apply, reinforcing continued downward pressure on disposal of waste to landfill, to be achieved via greater recycling and resource recovery. For the UK, circular economy principles thus continue to apply predominantly at European scale – i.e. waste and waste-derived resources circulate within a space defined mainly by EU member states and EU regulations.

This scenario could arise for essentially legal reasons – because the Brexit deal agreed with the EU requires elements of the Circular Economy package to be met or because the package is passed in time for its legislative elements to be brought into UK law - but also because of other factors tending to reinforce alignment with the EU.

One element is trade and its connections with industrial policy. Even outside the EU, the UK may continue to need to comply with EU norms for elements of waste management applying to materials and products that are traded with EU, e.g. provisions for minimum recycled

content in certain products. Discussions in other policy spheres such as energy suggests that there may be scope for the EU to require compliance with substantive targets (i.e. recycling targets) in order to access EU markets,⁴ depending on the political negotiations that unfold.

There is also the possibility that key governmental and industry actors come to agree that full participation in a circular economy constructed at EU territorial scale offers the greatest efficiencies and market opportunities. Moreover, alignment with EU policy and regulation could also facilitate investment by conferring institutional consistency and stability on the UK waste and resource economy into the medium term, and compensate to a degree for an absence of clarity from UK government waste strategy. The policy drivers for greater landfill diversion, for decentralised energy and associated opportunities means that some companies' current business case remains secure (Interview, Listed Company 2, 24.3.17).

Ongoing alignment with EU waste policy would, however, be associated with a number of tensions, e.g.:

- In governance terms, as the UK is no longer an EU member it would have little say in how policy and associated regulations develop, which may therefore become less accommodating of UK interests and the kinds of material that the UK is able to produce. The quality of recyclates exported from England has already been found inadequate by customers abroad (Gregson et al., 2015).
- Critics of the Circular Economy Package would point to the prospective costs of upping recycling targets in a market context where primary materials – especially plastics – have become cheaper. Difficult questions thus arise as to the economic viability of meeting these targets and on whom the costs should fall, especially in a context of ongoing austerity among local authorities (Interview, Analyst, 10.3.17).

4.3 Scenario B – Flatlining, fragmentation and regression

In effect, Scenario B reflects a broad fear of environmental organisations that the UK's exit from the EU would presage an era of limited and declining ambition in UK environmental policy (HoC-EAC, 2017) and applies it to waste. It assumes that the policy for waste and resource management in the UK ceases to be aligned with the EU and performance fails to register

⁴ The analogue here is the Single Energy Market, where there are concerns that if the UK defaults on EU renewable energy targets then this may affect its ability to trade electricity (Shankleman, 2017).

further environmental improvements in the years after Brexit. This may entail that policy becomes more fragmented and accommodating of disposal routes lower on the waste hierarchy.

A number of factors would reinforce Scenario B. Key government figures might seek to use Brexit as an opportunity to cut regulation, and this chimes with critics within the waste sector that the Circular Economy Package measures are expensive, and should be ignored in favour of 'home grown' solutions. Agendas of extended producer responsibility for waste are viewed as a potential cost on business or – even if viewed positively – as something where a pro-deregulation government does not seek 'interfere' by legal measures. Action on waste by manufacturers, retailers and other businesses thus becomes more dependent on whether individual companies see it as economically efficient, factoring in their concerns about image, corporate social responsibility and stakeholder pressure. Overall, in Scenario B the judgements of commercial actors are given significant scope to shape the means and ends of waste management policy, allowing some to take low cost, short-termist views. In terms of governance style, a drift towards voluntaristic and flexible policy approaches post-Brexit would be consistent with long-standing UK policy-making traditions favouring discretion and markets over fixed targets and standards.

NGOs see food waste as an area where there is a risk that such voluntarism comes to prevail in the UK, at least in England (Interview, NGO 2, 15.3.17). The policy rhetoric will be that any goals can be met more efficiently through (largely) voluntary means, from producers and consumers and that legally binding measures are not therefore required. The reality is that corporate action on food waste will remain highly inconsistent (HoC-EFRAC, 2017), as will progress with producer responsibility more widely.

A further reinforcing factor for Scenario B is that flatlining is the scenario most consistent with a future in which there continues to be limited Westminster government interest in or policy-making capacity for waste, allowing sustained marginalisation of the issue (HoL-EUC, 2017, Interview, Local Government 1, 3.3.17)). Governments do not seek overtly to dismantle existing waste policy but attrition occurs by default, due to other economic priorities dominating attention and weak implementation; EU funding for waste-related policy initiatives disappears without replacement (Interview, Legal Expert, 16.3.17, HoC-EFRAC, 2017). Waste and resources already scarcely receive a mention in the industrial strategy (BEIS, 2017). Central government responsibility may be abnegated by dumping more responsibility onto local government i.e. localist rhetoric is used to abandon or downgrade waste management/landfill/recycling targets for local authorities, giving them the 'freedom' to decide

what to do but without additional resources or powers. Waste policy has, after all, been subject to populist, anti-environmental measures in the past (Guardian, 2015; Interview, Welsh Government 1, 17.3.17).

Failure to promote producer responsibility or support behaviour change shifts the costs elsewhere, and local waste management practices in England are already at risk of deterioration, with budgetary pressures a key factor (Interview, Welsh Local Government 1, 16.3.17). Recycling rates in England fell from 2014 to 2015 and have been more or less static since 2012. In the context of austerity, and with budgetary and public pressure on adult social care, some local authorities have already become reluctant to invest in further recycling facilities, sought to reduce recycling services (e.g. dropping separated plastic waste collection and not implementing food waste collection; Interview, Lobbyist, 17.03.17; Interview, Sector Analyst, 10.3.17), and reduce engagement in educating publics and enforcing fly tipping regulations (Interview, NGO2, 15.3.17). Any relaxation of EU-derived recycling targets may entrench this situation (Interview, NGO2, 15.03.17), especially if moves towards producer responsibility also falter, thus exerting little downward pressure on the volumes or complexity of waste ending up in municipal disposal streams.

A number of issues push against Scenario B, however:

- For all the libertarian rhetoric of ‘cut red tape’, the waste sector has emerged from two UK red tape reviews more or less unscathed, and waste-related policy does not seem to be first in lobbyists’ firing line (Rayner and Hope, 2017).
- Pressure for international regulatory consistency to facilitate markets in waste and waste-derived materials may counter deregulatory actions. EU regulations that pertain to traded goods and materials including waste will still be highly influential, given the (presumed) desirability of exporting things like RDF to the EU. Industry respondents believe that the standards that drive these exports will largely remain in place because of the majority of pre-existing UK legislation and the Basel Convention (Interview, Listed Company 2, 24.3.17, Interview, Sustainability Consultant 3, 22.3.17). Also, multinational waste and resources companies may want to avoid ceding a competitive advantage to those companies working to higher standards (Interview, Sustainability Consultant 2, 16.3.17, Interview, Legal Expert, 16.3.17).
- The Government has used a broad narrative of the post-Brexit UK becoming a ‘Great trading nation’ and thereby seeking trading opportunities with countries outside EU. In this scenario it may be believed that lowering standards to those demanded by markets outside EU is worth the possible loss of waste-related markets inside the EU (Ogleby and

Mace, 2017, NGO 2, 15.3.17, Sustainability Consultant 2, 16.3.17), especially as the generally low-value, co-mingled recyclates that the UK produces tend to be more reliant on global markets (Gregson et al., 2015, Listed Company 1, 15.3.17, Analyst, 10.3.17). However, seeking to exploit markets for recyclates and RDF outside the EU still means meeting materials standards (Moore, 2017a), with a growing number of Chinese plants now meeting international standards for resource recovery (Gregson et al., 2015).

- It is unlikely that waste governance in the UK will see any slide 'down' the waste hierarchy, to an increasing use of landfill. None of our interviewees thought this likely, because recycling at present levels makes sense economically for many local authorities; multi-national waste companies do not develop new landfills abroad, in Europe, so would be unlikely to develop them here; and the planning difficulties of siting new landfills make such investment difficult.

If major return to landfill is unlikely, more conceivable within Scenario B is that the UK sees further moves towards incineration of waste through energy-from-waste plants, even as the European Commission becomes increasingly sceptical of this disposal route. Actors in the waste sector seem to think this is where economic opportunity lies. Faltering domestic recycling in England would be one driver, with incineration seen as a less demanding way of avoiding landfill than struggling to produce higher quality recyclates (Gregson et al., 2015, McGlone, 2017). It would be reinforced in the short-term by business desires to secure returns on extant investments in incineration and associated contracts. If a post-Brexit trade situation makes waste exports more difficult, this too might be used to underpin arguments for incineration as a low cost solution (McGlone, 2017). It would be assisted further by a UK government infrastructure strategy that takes to further steps to help expedite planning consents for incineration-based waste handling facilities, a move that would be consistent with the wider trends around infrastructure planning (Marshall and Cowell, 2016). Tellingly:

“In the majority of our business, I'd probably argue that Brexit has reduced the uncertainty ... Because we're now not expecting to implement the circular economy package, and we're therefore expecting the Government to not push recycling massively ... within the next investment cycle. And ... we've seen ... [the] National Infrastructure Commission trying to embed our sector within industry, which is a positive for us.”
(Interview, Listed Company 1, 15.3.17)

The economic viability of incineration is further enhanced to the extent that companies and government facilitate greater exploitation of the energy generation potential, primarily electricity, in an energy system in which such dispatchable power sources represent a

valuable adjunct to intermittent renewables. This is seen as a relatively low risk option for major waste companies (Interview, Listed Company 1, 15.3.17).

Overall, Scenario B is less a 'race to the bottom' in terms of environmental standards, but a world in which the UK becomes increasingly 'locked in' to disposal routes – incineration with energy recovery – on the second rung of the hierarchy (as seen elsewhere; Corvellec et al., 2013).

4.4 Scenario C – Diverse Green Shoots

In this scenario, Brexit becomes an opportunity for pursuing waste and resources policies that achieve significant improvements, pushing UK policy approaches further 'up' the waste hierarchy towards re-use and elimination at source, and doing so above and beyond what the EU-level action looks likely to achieve. As a scenario it is the most difficult to sketch from the evidence available as it is not an extrapolation of existing tendencies. For many environmental commentators, adopting the EU Circular Economy Package of measures constituted the main pathway for more environmentally-driven goals. For others, optimism comes from beliefs about where voluntary market action by corporations will take us. Overall, however, our interviewees rarely spontaneously presented ways in which Brexit would lead towards more sustainable UK policy; such silence itself speaks volumes. This reflects the fact that it is far from clear that EU membership debarred the UK from going further with its waste and resources strategy. Whereas in other policy sectors there has been sustained criticism of the environmental performance of EU policy (e.g. agriculture; Burns et al., 2016), in the sphere of waste it has only been the EU's use of simplistic, weight-based targets that is identified as having problematic environmental consequences (Interview, Listed Company 2, 24.3.17). Arguments levelled against EU action in the waste sphere have been mostly economic, not environmental.

Three sets of actions might be forces for improvement: narratives of national resource security; public pressure; action by the devolved governments. We examine each in turn.

One possibility is that Brexit becomes a vehicle for more intensive efforts at waste reduction and careful extraction of the resource content of waste streams *within the territory of the UK*. In effect, a circular economy becomes more firmly established at the national rather than European scale. This agenda might develop through the mobilisation of 're-shoring' narratives in policy debates amplified by the representation of resource access as an issue of national

security and competitiveness. This narrative has its advocates in the waste industry (McGlone, 2017, Messenger, 2016), and might dovetail with greater collaboration between local authorities to exercise greater control over waste markets (Interview Local Government 1, 3.3.17). Such agendas could draw reinforcement from any emerging problems around trading waste-derived resources as the UK leaves the EU.

A number of elements work against the promotion of national resource security arguments. Whatever the potential overall economic gains, there remains the political challenge of instituting policies that will have redistributive consequences for different sectors of the economy – some will profit, others may see it as a cost – in a climate where short-term growth pressures may prevail. There are uncertainties about how moves towards a UK-scale circular economy based on high levels of resource and value recovery can be realised in the context of trade deals with other countries, and where the standards adopted by the EU can be expected to continue to exert influence. It has, after all, been the Government’s mantra to ‘make Britain a global leader in free trade’ (BEIS, 2017, 80, emphasis added), and resource autarky is in tension with this. Moreover, even if the policy environment favours greater intra-UK treatment of waste, this does not automatically favour solutions at the top of the waste hierarchy, they could equally favour domestic energy recovery (McGlone, 2017).

Whatever happens with the UK’s EU exit negotiations, one should expect NGO, media and public pressure to put waste related issues under the spotlight and push for policy progress. One example would be the concerns around plastic wastes, especially their effects on marine environments, and the emerging interest in plastic bottle deposit refund schemes, which achieved widespread support across the political parties in the 2017 general election. In addition, contradictions in existing policy arrangements create continuous pressures to search for domestic solutions, such as extending producer responsibility for wastes to reduce volumes arriving with local authorities to address.

However, while leaving the EU can be represented as an ‘opportunity’ for organisations to campaign for policy improvements, it is far from clear why Brexit should automatically generate such outcomes. It remains to be seen whether the political climate has become markedly more receptive. An additional factor here is that since 2010 there has been a significant reduction in the availability of informed opinion for policy makers, with the abolition of the Royal Commission on Environmental Pollution and Sustainable Development Commission. Policy made in response to public pressure alone is unlikely to be comprehensive.

Given the actions already taken by the devolved governments on waste, one might view devolution as a force for driving forward more ambitious environmental goals, though the issues vary between the territories. In Northern Ireland, concerns around Brexit are very much shaped by the future form of the border with the Irish Republic, which could have profound effects on movements of waste north and south, legal and illegal.

Wales raises interesting questions about the multi-level politics of prospective waste policy improvements. The Welsh Government has achieved higher targets for recycling than England, and has been proposing further targets that exceed those of the EU's circular economy package (Interviews, Welsh Government 1, 17.3.17, and 2, 21.3.17). Both Wales and Scotland have been assertive about pursuing circular economy approaches and collecting higher quality recyclates for local and wider economic re-use. Corporate actors are also positive about the clarity of long-term direction the devolved governments have created (Interviews, Listed Company 2, 24.3.17; Lobbyist, 17.3.17, Sustainability Consultant 1, 13.3.17, Legal Expert, 16.3.17).

Looking at Wales in particular, the view of interviewees was that Brexit is not expected to have an adverse effect on Welsh waste and resources policy agendas. Given the significant devolution of powers in this sphere Wales has set its own waste legislation underpinning things like statutory recycling targets, which is independent of Europe. This affords a degree of insulation from the legislative fall-out of Brexit (e.g. Interview, Welsh NGO 1, 10.03.17). Moreover, interviewees felt that current policy should be expected to persist because the pursuit of 'zero waste' had won the arguments that it is environmentally, socially and economically the right thing to do, and was supported politically. As one interviewee put it, for Wales:

"My biggest concern is working out how we ... reach the standards that the future requires regardless of Brexit ... I think, I think with a bit of vision, Wales could say...'Brexit, who cares?' ... [We should] talk to people like the waste producers and say, regardless of Brexit and regardless of government policy, how can we work in a way that allows you and us to thrive and take more waste out?" (Interview, Sustainability Consultant 1, 16.3.17; see also Interviews, Lobbyist, 17.3.17, Statutory Agency and Local Government 1, 13.3.17).

The bigger risks to further environmental progress came not directly from Brexit but from austerity, reducing funding at devolved and local government level, and via the effects of Brexit on *Westminster* policy-making (Interviews, Welsh Government 2, 21.3.17, Welsh NGO1,

10.03.17). Even though waste policy and legislation is very substantially devolved, actors in Wales recognised that Westminster could stymie progress outside England in a number of ways:

- Westminster was seen to have given little interest to waste and to be more ‘hands off’ and open to deregulatory pressures (Interview, Welsh NGO1, 10.03.17), creating something of an ideological gulf with the Welsh Government’s more interventionist approach.
- The devolved governments were felt to have less influence through the various routes for intergovernmental coordination than business, such that ‘the industry will always win the lobbying with Westminster (Interview, Welsh Local Government 1, 16.3.17).
- Whether or not the Repeal Bill removes powers from the devolved governments (as discussed in Hunt, 2017), Westminster still controls levers that are vital in pushing towards zero waste, in the spheres of product standards and packaging. Westminster inactivity here makes it much more difficult for the devolved governments to push ambitious agendas for recycling and re-use. As noted earlier, the policy dynamics may be different for the more mobile, tradable components of waste circuits.
- There are also the effects that Westminster exerts on budgets for devolved governments, which is important given that waste policy improvements in Wales have been achieved by investing more public resources (for example, for the roll out of separate weekly food waste collections; Interviews, Analysts 10.03.17).
- There is also the issue of scale. Wales, Scotland and Northern Ireland represent only a small proportion of UK wastes compared to England, diminishing the leverage they can exert on commercial agendas and regulatory design. In arguments about policy and regulatory consistency within UK territory, or in relation to waste and resource trade, the industry may push successfully for arguments against divergence (Interview, Analyst, 10.03.17, Cowell, 2017).

There is a wider issue here. If cross-UK policy consistency is desirable, with which part of the UK should any national approach be aligned? There have been some instances of positive interactions between actions in the devolved territories on waste and wider policy change in the past. Interviewees attest that devolution has served as ‘policy laboratory’ for new technologies and schemes around waste, enabling new approaches to be tested and demonstrated and thus making it easier to then roll them out across the UK (Interviews, Sustainability Consultant 3, 22.3.17; Listed Company 1, 15.3.17). The tax on carrier bags applied through retailers, first introduced across Wales, is held up as an example; universal roll out of food waste collection (Rees, 2017) may yet prove to be another. Whether devolved

governments become a force for driving progress across the UK in the future post-Brexit will depend very much on the quality of any governance arrangements put in place for intergovernmental coordination (Interviews Welsh Government 1, 17.3.17; Welsh Local Government 1, 16.3.17), and the receptiveness of Westminster to ideas around eco-efficient or ecological goals, and to creating UK-scale circular economies. It may also depend on new dynamics of lobbying, linking devolved governments and national NGOs.

4.5 Enforcement

For many people working in the waste and resources sector, enforcement is a fundamental issue. One reason that it has not been given more attention thus far in this briefing report is that the connections to Brexit are not always clear, and enforcement concerns would seem to apply equally to any future scenario. This is very much the case with the fly tipping, for which the scope to design and implement enforcement mechanisms remains essentially in the gift of UK governments. However, there are three points of connection.

The first, mentioned above, concerns the nature of the border between the Irish Republic and Northern Ireland.

Secondly, and with more pervasive effects, should the UK leave the EEA as well as the EU, and thus the purview of the CJEU, then that removes a significant mechanism by which the UK government can be held to account for failing to comply with policy, e.g. recycling targets. For pro-leave advocates, this is a good thing, but there is considerable disquiet about this situation from opposition political parties and environmental groups (HoL-EUC, 2017, Interview, Lobbyist, 17.3.17; Sustainability Consultant 3, 22.3.17). The threat of infraction proceedings and fines from the EU has been an important force for domestic UK action in the past. This is quite separate from whether the Repeal Bill will leave a series of regulatory holes.

Thirdly, when it comes to issues around fly-tipping and other forms of illegal disposal the issues are somewhat different. Will dealing with Brexit reinforce the kind of political inattention and public sector austerity that means that enforcement gets little attention or funding? (Interview, Legal Expert, 16.3.17). If the solution is tighter regulation of the licensing of waste handlers (ESA, 2017), then this will need reconciling with political agendas that see Brexit as an opportunity for further lightening the touch of regulation.

5.0 Conclusions

The aim of this briefing has been to spark debate about the direction of UK waste and resources policy post-Brexit, and to provide some frameworks for reflecting about the potential future pathways that might emerge. In so doing, it has sought to widen reflection beyond the simplistic categories of 'hard' or 'soft' Brexit, and to extend analysis beyond the legal dimensions of what might change and what might be permissible. It has emphasised the multiple dimensions of change, by placing legislative issues alongside issues of substantive direction and territorial concerns. It has drawn on documentary and interview data with informed respondents from the waste and resources field. And in addition it has pressed the argument that Brexit is not just about change but thinking carefully about whether the present is likely to persist, or should do so. Out of this it has created three scenarios – 'tracking the EU', 'Flatlining, fragmentation and regression' and 'Diverse green shoots' - which characterise three broad pathways into the future.

But scenarios are not predictions and the very nature of the Brexit process makes prediction hazardous. We recognise that there may be future scenarios that combine the elements we identified in different ways, and elements no one has yet predicted. There are also new narratives that might gain traction, such as 're-shoring resources for economic security', yet they could be attached to different substantive goals. We also recognise that it is hard to remain morally neutral in what is a highly contested and politicised field. Put simply, what we treat as 'progress' may be seen by some as undesirable. We would very much welcome feedback on our scenarios and arguments (sent to the email address below).

In the process of developing this briefing it has become clear that thinking about future waste and resources policy for the UK, as the nation becomes subject to less compulsion to comply with EU legislation, ought to bring more fundamental questions to centre stage:

1) What is the importance of regulation?

EU membership has coincided with and to some extent reinforced political and business narratives that are pejorative about regulation. As we leave the EU, and it becomes less possible to equate 'regulation' with 'outside interference', so this should spark careful assessment of the proper role of regulation in defining a direction of travel for the environment and the economy. The waste and resources sector is a prime policy field for this to take place, as it exemplifies a sector where environmental regulation both creates and restricts economic opportunity, and where regulation is integral to the construction of trading policy. Such

assessments may well question the notion that the UK as a 'great trading nation' is also, in some simplistic fashion, a 'beacon for *free trade*'.

2) Where does voluntary action by business get us and where does it not?

A post-Brexit UK may well be a world in which there is greater reliance on voluntary business action, especially in spheres like producer responsibility and food waste. It seems timely therefore to think very carefully about the levels of improvement that this is likely to be achieve, unaided. It has been long known that solutions to environmental problems that are ecologically sustainable are not automatically the same as those which are economically efficient to business actors (Pearce, 1976); it is a good time to bring this discussion centre stage.

3) Territorial coordination – but with whom?

Waste and resources policy shows very clearly that the 'what' of future policy (what standards, targets and procedures should we pursue?) cannot be separated from the issue of territorial scale (who decides, and for whom?). Alongside the issue of the extent to which UK policy should track the EU are concerns about global and sub-national scale, both of which raise further tensions. Looking beyond the UK, and narratives of the country becoming a 'Great Trading Nation', there are tensions between agendas that foster increased openness of the UK economy, where materials chase profit, and those promoting 'national (or local) resource circularity in the economy. Brexit also raises profound questions about intra-UK policy coordination once the framework of EU policy is removed (Jordan and Gravey, 2017). How can UK inter-government institutions work to view the devolved nations as laboratories of waste policy innovation that improve UK approaches, rather than creators of policy inconsistencies that should be ironed out to level the intra-UK level playing field?

Feedback email address: cowellrj@cardiff.ac.uk

References

- BADDELEY, A. & VERGUNST, T. 2016. A Resourceful Future – Expanding the UK Economy. Bristol: Eunomia.
- BEIS 2017. Building our Industrial Strategy - Green Paper. London: Department for Business, Energy and Industrial Strategy.
- BIRD, S. 2017. Look beyond recycling rates for true waste reduction. *ENDS Report*, April.
- BULKELEY, H., WATSON, M., HUDSON, R. & WEAVER, P. 2005. Governing municipal waste: towards a new analytical framework. *Journal of Environmental Policy and Planning*, 7, 1-23.
- BURNS, C., JORDAN, A., GRAVEY, V., BERNY, N., BULMER, S., CARTER, N., COWELL, R., DUTTON, J., MOORE, B., OBERTHÜR, S., OWENS, S., RAYNER, T., SCOTT, J. & STEWART, B. 2016. The EU Referendum and the UK Environment: An Expert Review. How has EU membership affected the UK and what might change in the event of a vote to Remain or Leave?
- CORVELLEC, H., CAMPOS, M. J. Z. & ZAPATA, P. 2013. Infrastructures, lock-in, and sustainable urban development: the case of waste incineration in the Göteborg Metropolitan Area. *Journal of Cleaner Production*, 50, 32-39.
- COWELL, R. 2017. The EU referendum, planning and the environment: where now for the UK? *Town Planning Review*, 88, 153-171.
- CUP 2017. Forward, Together. Our plan for a Stronger Britain and Prosperous Future. London: Conservative and Unionist Party.
- DATE, W. 2016. Coffey: EU recycling target 'too high'. *Letsrecycle.com*, 12th October.
- DAVIES, S. 2007. Politics and markets: The case of UK municipal waste management. Cardiff: School of Social Sciences, Cardiff University.
- DEFRA 2011. Environmental permitting guidance: The landfill directive. London: Department for Environment Food and Rural Affairs.
- DEFRA 2013. Waste Management Plan for England. London: Department for Environment, Food and Rural Affairs.
- DICK, H., HENNIG, A. & SCHOLLES, P. 2016. Comparing the cost of alternative waste treatment options - Gate Fees report 2016. Banbury: WRAP.
- EC 1975. Council Directive 75/442/EEC of 15 July 1975 on Waste. Brussels: European Council.
- EC 1999. Council Directive 1999/31/EC of 26 April 1999 on the Landfill of Waste. Brussels: European Council.
- EC 2008. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives Brussels: European Council.
- EC 2012. Manifesto For A Resource-Efficient Europe. Brussels: European Commission.
- EC 2015. Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions - Towards a circular economy: A zero waste programme for Europe. Brussels: European Commission.
- EMF. 2017. *What is a Circular Economy?* [Online]. Available: <https://www.ellenmacarthurfoundation.org/circular-economy> [Accessed 20th July, 2017].
- EP 2017. Circular economy package - Four legislative proposals on waste. Brussels: European Parliament.
- ESA 2017. Planning for a Circular Economy. London: Environmental Services Association.
- FCC 2016. FCC Environment Group Chief Executive Paul Taylor discusses maximising the value of waste amid worrying reports Northampton: FCC Environment.
- FCC 2017. EU Waste diktat could cost Britain £2 billion. Northampton: FCC Environment.
- FILGUERIA, B. 2016. Brexit and environmental law in the UK. Available from: <http://www.eric-group.co.uk/brexit/brexit-and-environmental-law-in-the-uk>.
- GEE, G. & YOUNG, A. L. 2016. Regaining Sovereignty? Brexit, the UK Parliament and the Common Law. *European Public Law*, 22, 131-147.
- GRAVEY, V. & JORDAN, A. 2016. Does the European Union have a reverse gear? Policy dismantling in a hyperconsensual polity. *Journal of European Public Policy*, 23, 1180-1198.
- GREGSON, N., CRANG, M., FULLER, S. & HOLMES, H. 2015. Interrogating the circular economy: the moral economy of resource recovery in the EU. *Economy and Society*, 44, 218-243.
- GUARDIAN. 2015. Tory pledge to restore weekly bin collections to be dropped. 7th September.
- HOC-EAC 2017. The Future of the Natural Environment after the EU Referendum. London: House of Commons Environmental Audit Committee.
- HOC-EFRAC 2017. Food Waste in England. London: House of Commons Environment, Food and Rural Affairs Committee.

- HOL-EUC 2017. Brexit: environment and climate change. London: House of Lords European Union Committee.
- HOLDER, M. 2016. Demand for UK RDF 'would continue' in event of Brexit. *Lets Recycle Online News*.
- HOWARD, R. & GALLOWAY, T. 2017. Going Round in Circles: Developing a new approach to waste policy following Brexit. London: Policy Exchange.
- HUNT, J. 2017. The repatriation of competences. *EU referendum: one year on*. London: Political Studies Association / Kings College London.
- HUNT, J., MINTO, R. & WOOLFORD, J. 2016. Winners and losers: the EU Referendum vote and its consequences for Wales. *Journal of Contemporary European Research*, 12, 824-834.
- JENNINGS, P. 2016. CIWM responds to the EU referendum result. Northampton: Chartered Institute of Wastes Management.
- JORDAN, A. & GRAVEY, V. 2017. The Brexit election. Red, white blue ... and green? . *The Environmentalist*. Lincoln: Institute of Environmental Management & Assessment.
- KAMA, K. 2015. Circling the economy: resource-making and marketization in EU electronic waste policy. *Area*, 47, 16-23.
- KINGDON, J. W. 2003. *Agendas, alternatives, and public policies*, Boston, Little Brown.
- MACRORY, R. B. 2017. Brexit unlikely to give UK free rein over green laws. *ENDS Report* Twickenham: Haymarket Group.
- MARSHALL, T. & COWELL, R. 2016. Infrastructure, planning and the command of time. *Environment and Planning C: Government and Policy*, 34, 1843-1866.
- MAURICI, J. & MOULES, R. 2014. The influence of the Aarhus Convention on EU Environmental Law: Part 2. *Journal of Planning and Environment Law*, 2, 181-202.
- MCGLONE, C. 2017. Rise of the incinerators? *ENDS Report*. Twickenham: Haymarket Group.
- MESSINGER, B. 2016. Brexit – How the Waste & Recycling Industry Reacted to Referendum Result. *Waste Management World*. Vienna: International Solid Waste Management Association.
- MOORE, D. 2016. Government Publishes Red Tape Review Of Waste Sector. *CIWM Journal*. Northampton: Chartered Institute of Wastes Management.
- MOORE, D. 2017a. Chinese Customs Using X-Ray Machines To Check All Waste Containers. *CIWM Journal*. Northampton: Chartered Institute of Wastes Management.
- MOORE, D. 2017b. EEB accuse member states of "sabotaging" move to circular economy. *CIWM Journal*. Northampton: Chartered Institution for Wastes Management.
- MOORE, D. 2017c. MEPs Vote To Restore Original Circular Economy Package Recycling Targets. *CIWM Journal*. Northampton: Chartered Institute of Wastes Management.
- OGLEBY, G. 2017. CIWM: Circular economy will suffer without Government's helping hand. *edie.net*. East Grinstead: Faversham House Ltd.
- OGLEBY, G. & MACE, G. 2017. Article 50: what we know (and don't know) about the environmental impact of Brexit. *edie.net*. East Grinstead: Faversham House Ltd.
- OPSI 2002. The Landfill (England and Wales) Regulations (SI 2002/1559). London: Office of Public Sector Information.
- OPSI 2003. The Landfill (Scotland) Regulations 2003. London: Office of Public Sector Information.
- OPSI 2010. Environmental Permitting (England and Wales) Regulations. London: Office of Public Sector Information.
- OPSI 2011. The Waste (England and Wales) Regulations 2011.
- OPSI 2012. The Waste (England and Wales) (Amendment) Regulations 2012.
- PEARCE, D. 1976. The economics of waste disposal in the UK. *Resources Policy*, 2, 247-255.
- PENNON 2017. Pennon backs Policy Exchange focus on post-Brexit, bespoke for Britain resource policy. Exeter: Pennon Group.
- RAYNER, G. & HOPE, C. 2017. Cut the EU red tape choking Britain after Brexit to set the country free from the shackles of Brussels. *Daily Telegraph*, 27th March.
- REES, A. 2017. How we can learn from the Welsh recycling success story. *ENDS Report*. Twickenham: Haymarket Group.
- RESOURCE. 2017. Recycling: Who really leads the world? *Resource*, 13th February.
- ROSA, F. 2017. Simona Bonafè drives Europe to a circular economy. Brussels: Zero Waste Europe.
- SEPA 2009. A Guide to Waste Management Licensing. Edinburgh: Scottish Environmental Protection Agency.
- SHANKLEMAN, J. 2017. UK seeks to abandon green goal that may sour Brexit. *Bloomberg*, 5th April.
- SIMON, J. M. 2016. Brexit: a bad choice is no excuse for not moving towards zero waste. *How will Brexit impact Britain's waste management practices?* [Online]. Available from:

- <http://www.scottish-islands-federation.co.uk/how-will-brexite-impact-britains-waste-management-practices/> [Accessed March 2nd 2017].
- SORA, M. J. 2013. *Incineration overcapacity and waste shipping in Europe: the end of the proximity principle* [Online]. Barcelona: Fundació ENT. Available: <http://ent.cat/incineration-overcapacity-and-waste-shipping-in-europe-the-end-of-the-proximity-principle/?lang=en> [Accessed 20th July 2017].
- TAYLOR, P. 2017. Brexit could give the waste sector the coherent, long-term framework it desperately needs. *FCC Environment Blog* [Online]. Available from: <https://www.edie.net/blog/Brexit-could-give-the-waste-sector-the-coherent-long-term-framework-it-desperately-needs/6098298>.
- UNRUH, G. C. 2000. Understanding carbon lock-in. *Energy Policy*, 28, 817-830.
- WAG 2002. *Wise About Waste*. Cardiff: Welsh Assembly Government.
- WG 2010. *Towards Zero Waste*. Cardiff: Welsh Government.