From Waste to Resource

A Sustainable Strategy for 2019

A report from Overview & Scrutiny

Birmingham City Council, **01 July 2014**

Contents

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Preface

By Cllr Victoria Quinn, Chair, Transport, Connectivity & Sustainability O&S Committee

The way in which Birmingham manages and disposes of the 500,000 tonnes of municipal waste it produces annually is unarguably one of the biggest and most visible constant challenges to the city, its future and everyone who lives and works in it.

As the 25-year contractual arrangements that the City Council currently holds for waste disposal come to an end in 2019, this same challenge also represents what is arguably one of the most significant opportunities for the City Council in terms of meeting statutory obligations and levering in potentials for economic growth and environmental sustainability at a time when cuts to local government budgets have never been more severe in terms of budgets for statutory services it has to provide.

This report has aimed to appraise every option available to the city council within realistic budgetary contexts in order that the Executive is best able to consider the most appropriate decisions for waste disposal ahead of its contractual decision making timescale. The report in no way attempts to pre-empt those decisions, but rather challenges the Executive to meet the ambitions and aspirations for a sustainable, innovative and efficient disposal of waste to resource system, which is both responsive to local contexts and set against a wider landscape of fast changing economic and environmental parameters to which it must also be ever responsive.

Already within the evidence gathering stage of this report these same parameters changed both locally, nationally and environmentally many times. It is a tribute to both the foresight and understanding of committee members and of those who have contributed evidence to this body of work over the course of a two year inquiry process that this report may potentially be able to challenge and respond to these changes, providing a constructive overview context within which eventual Executive decisions can be made.

Summary of Recommendations

	Recommendation	Responsibility	Completion Date
R01	That a wide-ranging exercise to engage Birmingham citizens in the creation of a new waste strategy (see R03) is undertaken; utilising the principles set out in the District & Public Engagement O&S Committee's report "Citizen Engagement".	Cabinet Member, Green, Smart & Sustainable City	September 2015
R02	A clear evidence base is established to underpin the new strategy. This should include on-going analysis of waste and recyclate collected.	Cabinet Member, Green, Smart & Sustainable City	September 2015
R03	That a new Waste Strategy for the city is put in place. This should include the following: • A guiding principle, or set of guiding principles, to ensure a coherent and transparent approach to any new waste disposal arrangements; • A waste prevention plan for the city; • A consideration of all waste streams in the city including a mechanism for reviewing and, where appropriate, including new technologies to maximise the efficiency and effectiveness.	Cabinet Member, Green, Smart & Sustainable City	March 2016

	Recommendation	Responsibility	Completion Date
R04	That a draft procurement plan to achieve the goals of the Waste Strategy is brought to the committee for discussion. This to include the following: • How income / financial efficiency will be maximised from the new approach; • How flexibility in future contractual arrangements will be achieved; • A statement on the role the Tyseley Energy from Waste (EfW) Plant will play and how opportunities to invest in Tyseley to improve both economic and environmental performance will be fully explored; • How the City Council will be in a position to react to and employ new technologies in waste and recycling processing.	Cabinet Member, Green, Smart & Sustainable City Cabinet Member, Commissioning, Contracting and Improvement	November 2015
R05	As part of the management of the current contract, arrangements are made for a rigorous analysis of the Tyseley plant and site, to be conducted prior to the hand-over back to the City Council. This should include full inspection by appropriate experts to ensure that the plant and site are returned in accordance with the contract, and that any losses are fully accounted for.	Cabinet Member, Commissioning, Contracting and Improvement	December 2017
R06	A revitalised waste communication plan is needed, taking into account the outcomes of the public engagement exercise in R01. This should include: • A range of communication options to ensure messages reach the widest possible audience; • More user-friendly detail about the destination of waste and recycling on the website; • Engaging with local Councillors to give them the resources to pass on key messages; • Engaging with local community groups/spaces (including schools, places of worship, community centres) to give them the resources to pass on key messages; • More information/explanation about why Birmingham has made the choices it has and the positive outcomes from that.	Cabinet Member, Green, Smart & Sustainable City	September 2015

	Recommendation	Responsibility	Completion Date
R07	That a report is brought to the Connectivity & Sustainability O&S Committee on Household Recycling Centres (HRCs), their future and the options, with a view to the Committee undertaking a short piece of work on new HRCs in the city. The Committee's work will consider options for improving access to current HRCs, including • Opening hours; • Actions to reduce queues and congestion • Allow waste and recycling to be delivered on foot It should also address how the number of HRCs in the city might be increased, particularly with regard to smaller, more local, sites.	Cabinet Member, Green, Smart & Sustainable City	September 2014
R08	Progress towards achievement of these recommendations should be reported to the Connectivity & Sustainability Overview and Scrutiny Committee no later than December 2014. Subsequent progress reports will be scheduled by the Committee thereafter, until all recommendations are implemented.	Cabinet Member, Green, Smart & Sustainable City	December 2014

Glossary

AD	Anaerobic Digestion
BDP	Birmingham Development Plan
CD&E	Construction, Demolition and Excavation Waste
CHP	Combined Heat and Power
C&I	Commercial and Industrial
DCLG	Department for Communities and Local Government
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
EDOC	Electronic Duty of Care
EBRI	European Bioenergy Research Institute
EfW	Energy from Waste
ERDF	European Regional Development Fund
ERF	Energy Recovery Facility
HDPE	High-density polyethylene plastic
HRC	Household Recycling Centre
LGA	Local Government Association
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
ONS	Office for National Statistics
PET	Polyethylene terephthalate plastic
PCB/PCT	Polychlorinated Biphenyls/Polychlorinated Terphenyls
PFA	Pulverised Fuel Ash
PFI	Private Finance Initiative
RFID	Radio Frequency Identification
SLAs	Service Level Agreements
SRF	Solid Recovered Fuel
VESB	Veolia Environmental Services Birmingham

WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WEEE	Waste Electrical and Electronic Equipment
WFD	Waste Framework Directive
WRAP	Waste & Resources Action Programme
WRATE	Waste and Resources Assessment Tool for the Environment

Definitions of Waste

Municipal Waste: primarily waste that the council has a role in collecting and managing – waste produced by householders; schools and at other council premises; from commercial premises collected by the council; litter and street sweepings; and other waste collected by the council.

Household Waste: all waste and recyclate collected via kerbside collections, garden waste collections, all waste and recyclate collected at Household Recycling Centres, litter and refuse (including street cleaning waste, park litter and gully sweepings), bulky waste collections and household clinical waste collections.

Clinical Waste: the City Council collects household clinical waste:

- San-Pro waste (sanitary products, adult nappies, disposable gloves and aprons etc., are currently collected in tiger stripe bags (previously yellow sacks) and will be collected as part of the residual household collections on implementation of wheelie bins;
- Hazardous waste (blood, body tissue, skin, wound dressings and dialysis materials etc) are collected in orange sacks;
- Needles and sharp items are collected in sealed lid sharps boxes.

Residual Waste: any collected household waste that is not sent for reuse, recycling or composting.

1 Introduction

1.1 Purpose of the Inquiry

1.1.1 There are around 3.2 million tonnes of waste generated in Birmingham each year from all sectors including household, industrial, commercial, construction and hazardous wastes.[1] Birmingham is the largest local authority area in the UK and collects just under 500,000 tonnes of this waste (known as municipal waste) from residents and some businesses each year. Whilst the volume of this municipal waste rose slightly last year, there had been a year on year decrease between 2007 and 2012 (which is reflective of national trends).

1.1.2 The generation and disposal of waste underlies the health, wealth and well-being of the city. Recognising the opportunities and challenges this presents is critical to how the City Council is best able to meet its statutory obligations ever more effectively and efficiently.

1.1.3 Since January 1994, the disposal contract for Birmingham's municipal waste has been contracted out to Veolia Environmental Services Birmingham (VESB) – an international recycling and waste management company. This is a 25-year contract, which has been varied on numerous occasions, and will terminate in January 2019.

1.1.4 At this point there will be an opportunity to change these arrangements for the disposal of municipal waste, to design a modern, responsive waste to resource system, shaping how waste might become more of a resource for the city. Crucially it is now, in the five year period before the expiry of the waste contract, that these important decisions need to be made. The Transport, Connectivity & Sustainability O&S Committee therefore agreed to commence a major inquiry asking:

> What do we need to do to ensure Birmingham has the most sustainable and efficient waste/recycling strategy post-January 2019?

1.1.5 The context of this work was given further direction by the City Council's November 2012 Green Paper: *Safe, Clean and Green Neighbourhoods*, which stated that following the expiration of the current waste contract in January 2019:

> "…the council will need to make new arrangements for the provision of these services, taking into account the recommendations of the forthcoming Transport, Connectivity & Sustainability scrutiny committee's review entitled From Waste to Resources.

[1] As estimated in the Waste Capacity Study 2010, a report by Enviros Consulting Ltd for Birmingham City Council

The council has the ambition to be the greenest city in the UK and will therefore need to consider the options not simply as a process for the replacement of the existing contract, but a commissioning exercise on how it proposes to deal with the management and treatment of waste as a whole in the future. This could lead to alternative treatment methods for waste."

1.1.6 The purpose of this inquiry was therefore to explore all the available options for waste to resource; capturing and presenting these options alongside collective views on key principles and requirements for waste management, so that the Executive can appraise these in making appropriate decisions in the coming years.

1.2 Three Important Drivers of Policy

1.2.1 In undertaking this inquiry, the Committee did not start with a blank sheet of paper, but paid particular attention to external constraints, and the consequences and opportunities of evolving regulatory frameworks. These constraints and pressures are explored throughout the report, but it is worth highlighting three key drivers in waste management:

1. The Financial Context

- Recognising that at the forefront of all considerations of new policies and strategies has to be the reality of the scale and severity of cuts to local authority controllable budgets over the coming years (including the period during which key decisions about the future waste strategy must be determined). The extent and nature of this challenge is explored in more depth in Chapter 2; however the impact and significance of the challenge runs throughout this report, and each option has been considered through this budgetary lens.

2. The Waste Hierarchy

- Recognising that the options for disposing of waste are set out within the Waste Hierarchy (see Figure 1 below), which is "both a guide to sustainable waste management and a legal requirement of the revised EU Waste Framework Directive, enshrined in law through the Waste (England and Wales) Regulations 2011."[2] Local authorities are encouraged to dispose of waste as high up the hierarchy as it is practically possible. Government guidance does however make clear that the waste hierarchy is not inflexible. Where there is the potential to evidence more optimal environmental outcomes, it is possible to depart from the hierarchy. Birmingham's performance against the hierarchy is considered in Chapter 3 (section 3.4).

[2] Government Review of Waste Policy in England 2011

3. The Proximity Principle

- Recognising that within the revised Waste Framework Directive (WFD), there is the principle of 'proximity'. This imposes on European Member States a requirement to establish a network of waste disposal installations for recovery of municipal waste. This network must:

  "…enable waste to be disposed of, or be recovered, in one of the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health."[3]

Figure 1: The Waste Hierarchy

1.3 The Scope of the Inquiry

1.3.1 The issues of concern to this inquiry cross many Executive portfolios and Strategic Directorate workstreams: procurement and contract management, economy and infrastructure, skills and education, sustainability, social inclusion (in terms of different needs, housing, family sizes) and local devolved services in terms of place shaping.

1.3.2 The inquiry focuses on the opportunities afforded by the expiration of the current waste disposal contract in January 2019, which raises the question of what the City Council will do with the municipal waste generated in the city and how waste may become more of a resource. The Tyseley Energy from Waste (EfW) plant – a facility, opened in 1996, that enables the city to divert

[3] DEFRA, Waste Management Plan for England, December 2013

most of its waste from landfill – will revert to City Council control, with potentially around 15 years of operating life remaining after 2019 (subject to a condition survey, not yet carried out).

1.3.3 There are many opportunities but the Committee also recognises the risks: the main lesson from the current contract is that any approach should be "future proof" and flexible – capable of not just absorbing change, but positively encouraging better, more efficient and sustainable approaches to waste disposal. It is a complex and fast moving area – in terms of legislation (some of it derived from European directives) which can restrict local authorities in responding to local imperatives or trends, or imposes new challenges upon local authorities in terms of waste collection methods, sustainability targets or funding opportunities. There are new technologies being developed that offer different, possibly more local, possibly cheaper, ways of disposing of waste – some being developed here in Birmingham. The numbers of households and volumes of waste involved will also change, as will householder attitudes to this waste – it is imperative to get this analysis right.

1.4 Conducting the Inquiry

1.4.1 The Committee invited people and organisations from across the city and beyond to send us their views through a public call for evidence, with public committee meetings held between November 2012 and September 2013. The key lines of enquiry discussed were:

- What are the options for Birmingham in respect of waste/recyclate collection and disposal following the end of the Veolia waste disposal contract in 2019?
- What are the environmental, planning, contractual, financial and social inclusion implications of these options?
- What does Birmingham need to do to ensure our waste is a resource for the city and gains the most economic value?
- What capacity is there for harnessing local talent, business and engagement in this process?
- What can we learn from elsewhere in the UK, Europe and internationally in terms of waste to resource, sustainability and recyclate opportunities?

1.4.2 Throughout this year long evidence gathering period, the context of the inquiry evolved and the Committee has strived to capture changes and issues that have arisen.

1.5 The Report

1.5.1 This report therefore has brought together all of the different options to consider in the development of a future waste strategy, in terms of how realistic, cost-effective and beneficial to the city they would be. Core to this has been the need to consider the City Council's role in championing "public interest" and social value. The potential is there for the city to catalyse improved individual responsibility for waste reduction, re-use and re-cycling whilst considering

potential benefits that could flow from this in terms of public realm, cheaper energy and job creation.

1.5.2 Chapter 2 sets out the challenges facing the city. Chapter 3 summarises where Birmingham is now with waste collection and disposal methodologies. Chapters 4 and 5 set out what the alternative options might be and what would be needed to make these suggested options possible, viable and sustainable. Chapter 6 sets out the conclusions and recommendations.

1.5.3 All the witnesses who attended the sessions and visit are listed in Appendix 1. The Committee is very grateful to all those who gave their time and ideas to support this inquiry.

1.5.4 The information on performance and volumes of waste and recycling collected is set out in Appendix 2.

1.5.5 The information on recycling / bring banks is set out in Appendix 3.

2 A Changing Landscape: The Challenges in Waste Management

2.1 Overview

2.1.1 The main area of challenge in undertaking this inquiry were the timescales involved when considering Birmingham's waste disposal needs. The experience of the current contract, negotiated in the early 1990s, demonstrates the difficulty of incorporating sustainability into procurement processes and "future proofing" waste contracts so that they remain responsive to evolving waste requirements and regulatory frameworks.

2.1.2 Whether, with the expiry of the current contract, the next step for waste management in the city will be another contract of 25 years or not, any future strategy must be sustainable over future years and responsive over a significant period and drive behavioural change for the public good. Within this period, the landscape will no doubt change beyond recognition (as it has over the past 25 years) in terms of the financial and commercial imperatives, environmental parameters and policy drivers that are key to any future strategy's sustainability. It is important to highlight some of the key areas of challenge, and their interdependence, early on. In summary these challenges are:

- Financial considerations;
- Legislation and other policy drivers – European and national;
- The different waste streams and the changing technologies that accompany them;
- The "known unknowns".

2.2 Financial Considerations

2.2.1 Local government is currently facing unprecedented levels of cuts to all its budget streams, the consequences for all areas of the City Council have been set out in public. For example, the Council Budget 2014+ states that:

> "The combination of cuts to local government grants and increased pressures on spending means that there will be continued year on year cuts to the Council's spending. This means cumulative savings of over £822m by 2018."

2.2.2 There have been, and will be further cuts in frontline services. At the point of procuring any new contract, all council services may be operating from budgets which are significantly smaller than they are now. Indeed, the Deputy Leader of the Council has gone as far as to say:

"By the time we get to 2017-18, if we continue down this road we will struggle to continue to provide statutory services"[4]

2.2.3 Waste management will have to be done differently if we are to continue to meet statutory responsibilities with less money available.

2.2.4 The budget figures for waste management since 1994 are set out in Figure 2a, and illustrate the changes over the past 20 years. This shows that spend on waste management more than doubled between 1994 and 2009, but has since started to fall. Figure 2b sets out the projected spend up to 2019.

Figure 2a: Fleet & Waste Management Budgets (at 5-yearly intervals)

Year	Fleet and Waste Management (£'000)	Public conveniences (£'000)	Districts Service Level Agreement (£'000)	Net Budgets (£'000)
1994/1995	31,266	1,003	-	32,269
1999/2000	44,202	557	-	44,759
2004/2005	53,963	622	-	54,585
2009/2010	52,294	659	18,735	71,688
2014/2015	35,543	686	18,735	54,964

Figure 2b: Projected Fleet & Waste Management Budgets

Year	Fleet and Waste Management	Public conveniences	Districts SLA	Net Budgets
2015/2016	35,673	686	18,735	55,094
2016/2017	35,899	686	18,735	55,330
2017/2018	36,655	686	18,735	56,076
2018/2019	37,424	686	18,735	56,845

2.2.5 The expenditure trends are a reflection of a combination of factors including demographic growth, inflationary pressures, investment in services for street cleaning, green waste and recycling and increasing landfill tax rates.

2.2.6 The future financial trends are indicative and do not take into account potential future national policy changes and additional savings that may be required from the on-going national public budget/debt reduction plans.

[4] http://www.theguardian.com/society/2013/dec/09/birmingham-council-unable-fund-statutory-services

2.2.7 These budgets for waste sit within the Place Directorate of the City Council, alongside those for parks and open spaces, highways, environmental health and local services. Waste disposal budgets are held centrally within the directorate (first and second columns in Figure 2); collection budgets are devolved down to the ten District Committees (third column). Currently these are held in Service Level Agreements (SLA) with the Fleet and Waste Management service. As devolved local governance by districts is further embedded between now and 2019 and beyond, the basis of these SLAs is likely to come under review. The effect of this will be to give each district greater control over the levels of service they provide. The challenges faced by District Committees will be to marry the local need with wider incentives and opportunities, but also taking into account reduced budgets across all services that do not respect district boundaries.

2.2.8 This inquiry therefore has to be "reality checked" in terms of three key financial considerations:

- The costs of operating the service;
- The opportunities to maximise income and get best value;
- The likely lack of capital available for any new infrastructure, and the sustainability and lifespan of any future investment (beyond 2015/16, after the completion of the investment of £63m in vehicles, bins and depots under the Wheeled Bin Programme).

Operating Costs

2.2.9 In recent years, reports auditing the City Council accounts have referred to the costs of waste management as an area of concern (albeit recognising the achievement of reducing the amount of waste sent to landfill, which has significant costs attached due to the landfill tax – see below). The Annual Audit Letter 2010/11 for the City Council highlighted that the City Council's costs at that time were comparatively high in waste disposal and waste collection:

> "The reasons for this relatively high cost related to the productivity and previous terms and conditions of Fleet and Waste Management services; the comparatively high levels of waste being collected from households; policy decisions not to charge for some aspects of waste collection such as bulky waste, clinical waste, asbestos; and particularly costs associated with the building and maintenance of the Tyseley Energy from Waste plant"[5]

2.2.10 The 2011/12 and 2012/13 Annual Audit Letters also referred to the need for the City Council to continue its focus on:

> "improving levels of recycling, and reducing the costs of waste collection services".[6]

[5] Annual Audit Letter 2010/11 for the City Council (Audit Commission)
[6] Annual Audit Letter 2011/12 for the City Council (Grant Thornton); Annual Audit Letter 2012/13 for the City Council (Grant Thornton)

2.2.11 Since 2010/11 the City Council has responded to these challenges in the following ways;

- Renegotiation of the waste disposal contract;
- Modification of the terms and conditions of fleet and waste management operatives;
- Introducing charges for bulky waste and green waste collections;
- Removal of the provision of free black sacks;
- Piloting and then introducing a wheelie bin collection.

2.2.12 In terms of waste collection costs, the Committee has heard that financial analysis indicates that the wheelie bin service future operating cost model is deliverable within the current approved cash limits of the City Council. However, a question remains as to how far the current full scope of waste collection and management services will be sustainable.

Current Contract Costs

2.2.13 In terms of current waste disposal costs, the City Council is committed under the current contract to pay around £34.5m a year (including around £10m for the capital repayments on Tyseley Energy from Waste (EfW) plant).[7] The plant is owned by the City Council but operated and maintained by Veolia under the current contract, reverting to the City Council at the expiry of the contract.

2.2.14 There are financial advantages to these arrangements; these relate to the fact that, because of the Tyseley EfW plant, very little waste is sent to landfill. This is in contrast to many other parts of the country where escalating landfill tax is a major cost to local authorities. Officers from the Fleet & Waste Management service estimate that the City Council currently avoids landfill tax of around £22.4 million per annum at 2012 rates.

2.2.15 The City Council pays Veolia around £65 per tonne for the bulking/haulage and treatment of residual waste.[8] This compares to the current landfill disposal costs of around £100 per tonne exclusive of bulking/haulage (a sum which will increase further as landfill tax increases).[9]

2.2.16 When the current contract expires in 2019, the Tyseley EfW Plant will revert to the Council at no additional cost. Under the terms of the contract, Veolia are obliged to return the plant in good working order that is both efficient and compliant with relevant regulations. At this time, in 2019, the financing costs for the Plant (which constitute the majority of current costs) will have been paid off.

2.2.17 The Tyseley EfW Plant should have an economic life up to and potentially beyond 2035, but this needs to be validated by a condition survey (the impact of this for the options for Birmingham's future waste strategy is discussed further in Chapter 4).

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[7] Green Paper: Safe, Clean & Green Neighbourhoods – page 8
[8] Any collected household waste that is not sent for reuse, recycling or composting
[9] Evidence to the inquiry from Birmingham City Council's Fleet & Waste Management service

2.2.18 As a result, by 2019 waste treatment costs will comprise operating and maintenance costs net of revenue from the sale of electricity generated from the plant which should significantly reduce costs compared with current levels. This could give the Council flexibility to consider options which maximise the value of generated electricity, for example displacing existing energy costs or selling to the grid. The City Council could also benefit from higher electricity prices although this would be subject to the consequences of fluctuating prices.[10]

Maximising Income

2.2.19 There is also an opportunity ahead of 2019 with regards to realising the economic, as well as the environmental and social, values of our waste. Under the current waste contract, Veolia own the municipal waste and so take the costs and retain the income from recyclate (with the main exception of paper and card which goes to the paper mill in Nechells run by Smurfit Kappa).

2.2.20 With the expiry of the current contract in January 2019, the City Council will regain control of the municipal waste and the costs and incomes associated with it. This therefore provides an opportunity for the City Council to further maximise income from waste. The caveat to this however is that with the potential to maximise income returns comes the exposure to the risk of unpredictable market forces and susceptibility to greater costs as a result.

Capacity at Tyseley EfW Plant

2.2.21 The Tyseley EfW plant is capable of processing 350,000 tonnes per annum of waste. With opportunities to increase recyclate volumes, there is the potential for decreased amounts of residual waste to be sent to Tyseley EfW plant, and this may open opportunities to sell capacity at the plant and increase income.

2.2.22 In addition, a third waste stream could be installed at Tyseley and this can be achieved within the current site boundary. The third line would process around an additional 175,000 tonnes per year – and some of this capacity could be sold to other local authorities or other waste disposal markets. If this third stream is installed as a Combined Heat and Power (CHP) plant, then additional revenues could be generated from the export of heat as and when a suitable market develops. CHP is explored further in Chapter 4.

2.2.23 In 2005 VESB commissioned and built a new 5,000 tonne per annum secure waste disposal facility for clinical waste. Waste comes to the site in enclosed receptacles and is controlled under VESB's Integrated Pollution Control licence. The gases produced by the process are fed into the main EfW plant system and therefore contribute to the energy recovery achieved on site.[11]

[10] Evidence to the inquiry from Birmingham City Council's Fleet & Waste Management service and Veolia
[11] Sharing responsibility for Birmingham, VESB leaflet, http://www.veoliaenvironmentalservices.co.uk/Documents/Publications/Main/Municipal%20Contracts%20and%20Facilities/Birmingham_Contract_Brochure.pdf (12th March 2014)

Recyclates

2.2.24 There are opportunities to maximise income from recyclate. In the Local Government Association (LGA) report *Wealth from Waste,* evidence from leading local authorities, key industry players, charities and Government agencies provided a detailed analysis and evaluation of the waste sector. It identified the opportunities, risks and challenges for local government and key requirements from Government, setting out ways in which local authorities can contribute to driving up the quality of recyclate and increasing recycling volumes, and we return to some of these ideas below. Whilst it should be remembered that not all the LGA suggestions will be applicable in Birmingham, it is nevertheless worth noting that, in the view of the LGA, there is potential to obtain further value:

> "Local authorities presently obtain a little over a quarter – approximately 28 per cent – of the total financial value of materials they collect, owing to how the supply chain has worked to date. An industry-wide discussion on how councils could be supported to deliver what the supply chain needs is timely and economically beneficial.
>
> If councils obtained a greater share of revenue, for example by an increase to 40 per cent, to reflect the pivotal role that they and their residents play in increasing recycling rates, then additional revenue of over £820 million could be received by 2019/20."[12]

2.2.25 Currently, recycling income is maximised through increasing volumes – particularly with the introduction of wheelie bins, which (the pilots show) could increase the amount of recyclate material collected. However, exploration of how the City Council can obtain a greater share of revenue should play a part in any future contract negotiations.

Lifespan, Sustainability and Funding of Infrastructure

2.2.26 It is understandable that some may assume that a starting premise for a new waste to resource approach would be to look to new infrastructure, to give the city state of the art facilities with leading environmental performance and greater flexibility.

2.2.27 Indeed, there may be many advantages in this (see Chapter 4) – assuming that it is recognised that any waste infrastructure must be able to adapt to long term change and assist to drive waste up the hierarchy, not constrain it, particularly given the huge investment required. The use of new technologies also has the potential to deal with industrial and commercial waste, maximising their value.

[12] Wealth from waste: The LGA local waste review, Local Government Association, June 2013

2.2.28 The Waste Capacity Study (2010)[13] identified that the city lacks recycling capacity/facilities. It stated that there is a shortage of Material Recycling Facilities (MRFs) within Birmingham, and over 27,000 tonnes of waste is being exported cross boundary to facilities outside Birmingham. The draft Birmingham Development Plan (see section 2.3.18) includes the statement that:

> The expansion of existing or the development of new waste management facilities will be supported, providing that proposals satisfy the locational criteria set out in Policy TP15. Opportunities to improve the environmental performance of existing facilities will be explored.

2.2.29 However, again the financial realities for local government across the country mean that the availability of investment for new facilities is extremely restricted. It seems highly unlikely that Birmingham will receive extra investment from Government for building new waste facilities, as has happened with other local authorities in the past and in a different financial context. Moreover, the Department for Environment, Food and Rural Affairs (DEFRA) projections indicate that there will be sufficient residual waste treatment capacity in the country in 2020 to enable the UK to meet its EU landfill targets without additional measures being taken.[14] The Government has no current plans to invest in waste projects.

2.2.30 It was for this reason – the belief that there is already sufficient residual waste treatment capacity in the country to meet EU targets – that the Government withdrew Private Finance Initiative (PFI) credits from some waste projects.

2.2.31 This included support for the proposed £250m Allerton Waste Recovery Park near Knaresborough and a £170m facility planned for Bradford in February. The four authorities behind the schemes, North Yorkshire, City of York, Bradford and Calderdale, considered challenging the decision but decided against doing so in January 2014.[15] In addition, funding (£169m) for a waste incinerator near King's Lynn was withdrawn from Norfolk County Council in October 2013. The scheme was finally terminated in April 2014 at an estimated cost of £30.26m.[16]

2.2.32 These examples serve to highlight the changed landscape with regard to Private Finance Initiative (PFI) for waste management infrastructure and presents additional financial challenges for local authorities in shouldering the risks of capital investments.

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[13] Waste Capacity Study 2010, Enviros Consulting Ltd for Birmingham City Council
[14] Wealth from waste: The LGA local waste review, Local Government Association, June 2013
[15] Yorkshire Post, 25th September 2013, http://www.yorkshirepost.co.uk/news/main-topics/general-news/pulling-plug-on-two-incinerators-could-cost-10m-1-6081401; http://www.bbc.co.uk/news/uk-england-york-north-yorkshire-25777494
[16] http://www.bbc.co.uk/news/uk-england-norfolk-24583756; http://www.bbc.co.uk/news/uk-england-norfolk-26925831

2.2.33 As the LGA *Wealth from Waste* reports, the intention behind the withdrawal of this subsidy is to enable the market to develop infrastructure on a commercial basis creating a more sustainable industry. However they note:

> "For the time being the change has left big waste infrastructure, including energy from waste plants, in planning and funding limbo which will see either a hiatus or an end to the delivery of these types of large residual waste treatment facilities beyond those in the pipeline."

2.2.34 The implications of this for the inquiry are that the financial frameworks within which local government must operate are not able to facilitate any consideration of waste to resource strategy that involve infrastructural change solutions, as technologically and environmentally short-sighted as this may appear.

2.3 Legislation and Policy Drivers

2.3.1 As with the financial challenge, the legislative framework that will inform future waste strategy is another area of fast moving change. The key drivers are set out below.

European Legislation

EU Waste Framework Directive (WFD)

2.3.2 The **EU Waste Framework Directive** (2008/98/EC) provides the legislative framework for the collection, transport, recovery and disposal of waste, and includes a common definition of waste. It was originally passed into law in 2006, and revised in 2008. The directive requires all member states to:

- Take the necessary measures to ensure waste is recovered or disposed of without endangering human health or causing harm to the environment;
- Take appropriate measures to encourage firstly, the prevention or reduction of waste production and its harmfulness and secondly the recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials, or the use of waste as a source of energy (i.e. move waste disposal up the waste hierarchy – see Chapter 3).[17]

2.3.3 These requirements have been transposed into UK law, as has the Revised EU Waste Framework Directive target that 50% of waste from households is re-used or recycled (including composting) by 2020.

2.3.4 As an illustration of the impact of this legislation, the UK Government enacted legislation, which will come into force on 1 January 2015, that means waste collection authorities must collect waste

[17] https://www.gov.uk/waste-legislation-and-regulations

paper, metal, plastic and glass separately. In transposing the directive into UK law, the Government interpretation has allowed for mixed dry recyclate collections (i.e. glass/cans/plastic). As such, Birmingham's current system of collecting paper/card in one stream, dry recyclates (glass/cans/plastic) in another and residual waste in a third therefore complies with this requirement. It is likely, however, that there will be further legal challenges to the UK position, and any successful challenge may have an impact on Birmingham's arrangements for waste collection.

The Renewables Directive

2.3.5 The **Renewables Directive** (2009/28/EC) sets a target to deliver 20% of all Europe's final energy demand from renewable sources by 2020. The UK's share of this target is 15% renewable energy by 2020 (in 2010 the actual level of renewable energy was around 1.5%).

2.3.6 The Renewable Energy Strategy (2009[18]) outlines the ways the UK could increase the uptake of renewable energy to meet this target, via both financial and non-financial measures. These include measures to support advanced technologies in relation to waste:

- Discouraging landfill of biomass as far as is practical, thereby maximising its availability as a renewable fuel;
- Considering the scope for Local Authorities to collect and separate organic food waste, so that it can be broken down to biogas through Anaerobic Digestion (AD);
- Encouraging Waste Incineration Directive compliant infrastructure and support for Anaerobic Digestion as a means of generating energy from waste (see Chapter 4 for further details on food waste);
- A biomass communications program to raise awareness about the benefits of bioenergy, including energy from biomass waste.[19]

2.3.7 The suggestions within this strategy go some way to flag up methodologies to improve current waste management challenges and the potential for improved waste to resource strategies. However technologies and their sustainability in terms of broader environmental implications will continue to divide opinion as the research continues to evolve. As such this strategy serves as a menu of "knowns" but requires further analysis.

The Landfill Directive

2.3.8 The **Landfill Directive** (1999/31/EC) is primarily concerned with reducing the amount of waste sent to landfill. It sets a target for the diversion of biodegradable municipal waste from landfill in 2013 (50% on 1995 levels) and 2020 (30% on 1995 levels). The UK has been granted a four-year derogation to meet the targets imposed by the directive, aiming to reduce the amount sent to landfill to 35% of the 1995 baseline by 2020.

[18] Department for Energy and Climate Change; http://www.official-documents.gov.uk/document/cm76/7686/7686.asp
[19] As set out in the Waste Capacity Study 2010, a report by Enviros Consulting Ltd for Birmingham City Council

2.3.9 The UK still sends around 49% of waste to landfill, although in Birmingham this is under 10%. In this respect, Birmingham is performing well above the national average and future improvements upon this will contribute further to national targets.

Review of Waste Policy and Legislation

2.3.10 The European Commission is currently undertaking **a review of Waste Policy and Legislation,**[20] to be taken account of when it is presented later in 2014. The review includes:

- A review of key targets in EU waste legislation (in line with the review clauses in the Waste Framework Directive, the Landfill Directive and the Packaging Directive);
- An ex-post evaluation ("fitness check") of five of the EU Directives dealing with separate waste streams: sewage sludge, Polychlorinated Biphenyls/Polychlorinated Terphenyls (PCB/PCT), packaging and packaging waste, end of life vehicles, and batteries;
- An assessment of how the problem of plastic waste can best be tackled in the context of the current waste policy framework, based on the publication of the Green Paper on a European Strategy on plastic waste in the Environment.

2.3.11 The implications of this review are likely to lead to the reinforcement of existing targets or to the introduction of new targets. At the same time, the review will look into possible overlaps and, if necessary, identify options to simplify legislation and improve clarity and consistency of existing legislation. The effect of this will be further changes to the national regulatory framework for waste management by local authorities, which may well come into force in the run up to the expiry of the contract in 2019. While the trajectory of these changes are known – i.e. better and more re-use and recycling – the pace and challenge cannot be predicted.

National Waste Strategy

2.3.12 The Coalition Agreement of 2010 contained commitments to:

- "Work towards a zero waste economy and encourage councils to pay people to recycle and work to reduce littering"
- Introduce "measures to promote a huge increase in energy from waste through anaerobic digestion".

2.3.13 To further these aims, the Government conducted a national review of waste policy in England (2011). The published report contained a vision to

> "… move beyond our current throwaway society to a "zero waste economy" in which material resources are re-used, recycled or recovered wherever possible, and only disposed of as the option of very last resort."[21]

[20] http://ec.europa.eu/environment/waste/target_review.htm
[21] Government Review of Waste Policy in England 2011

2.3.14 There are six key features of national policy:[22]

1. The Waste Hierarchy (see Chapter 1);
2. Diversion of waste from landfill;
3. Hazardous Waste Disposal – with new waste laws governing how hazardous waste can be disposed of in England and Wales, including stipulations that larger amounts have to be disposed of in specially managed waste facilities, and prohibiting the disposal of hazardous liquid waste, batteries, whole and shredded tyres in landfills in the UK;
4. Increasing recycling – with national targets for the recycling of waste to meet European WFD requirements. The Government has stated that:

   "Our current modelling indicates that we are on track to meet the revised Waste Framework Directive target to recycle 50% of waste from households by 2020."[23]

   Crucially, this 50% target is a national one and will not be imposed on each local authority. However in order to meet national targets it is not unforeseeable that such targets for local authorities are introduced in the future.
5. Reduction of waste from the commercial sector – including new laws on producer responsibility, the Producer Responsibility Obligations (Packaging Waste) Regulations 2007, which require businesses to recover and recycle a certain amount of packaging. Further, they are required to design their products in such a way that encourages easy dismantling and recycling at the end of the life cycle. Producer responsibility laws also cover Waste Electrical and Electronic Equipment (WEEE – 2006) and End of Life Vehicles (2000);
6. Shared Responsibility – national policy operates on the basis of "shared responsibility." this equates to the premise that everyone generates some amount of waste, so everyone has a part to play in preventing further waste growth. All parts of society also have a responsibility to reuse, recycle and dispose of waste properly.

2.3.15 In the National Waste Strategy, the Government confirms that local authorities will continue to have the lead waste management role at the local level. Generally, there is confidence that, across the board, local authorities will meet the 50% of waste to be recycled by 2020 target without the need for additional measures to ensure this. There is a 90% modelled chance that landfill diversion targets will be met in England by 2020.

2.3.16 The National Waste Strategy sets out the expectation that the public sector, including local authorities, will be expected to lead by example i.e. through improved planning and procurement; and managing food waste in a sustainable way – including by anaerobic digestion, composting or incineration with energy recovery.

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[22] As summarised on http://www.environmentlaw.org.uk/rte.asp?id=82
[23] Government Review of Waste Policy in England 2011

Climate Change Act 2008

2.3.17 Also relevant to this topic is the Climate Change Act 2008[24] which contains challenging national targets: an 80% cut in carbon emissions by 2050 (including a reduction of at least 34% by 2020) and 15% renewable energy production nationally by 2020.

Local Policy Drivers

2.3.18 At a local level there are also a number of local policies and strategies that must be considered:

- The **Leader's Policy Statement 2013** included a commitment to take a fresh look at how the City's waste from our households, businesses and public bodies is managed, committing to producing a resource efficient Smart Waste Plan for Birmingham (this is currently on hold awaiting the outcome of this inquiry).
- The **Draft Birmingham Development Plan (BDP)** sets out the statutory framework to guide decisions on development and regeneration in Birmingham up to 2031, including how and where new homes, jobs, services and infrastructure will be delivered and the type of places and environments that will be created. Three policies relate to waste management, which will facilitate the development of new infrastructure through the planning system and makes the commitment that:

  > The City Council will seek to prevent the production of waste wherever possible, and where this is not feasible will seek to move and manage Birmingham's waste up the waste hierarchy.

- The **Green Commission's Vision**[25] and **Carbon Roadmap** pulls together the green economy, planning framework and policy; and sustainable energy and CO^2 emissions reduction. Specifically with regard to waste to resource management, this includes:
  - Ensure better management of the city's total waste and improved recycling, reuse and conversion to energy – towards a zero landfill waste city.
  - Position Birmingham as a leader in resource-recovery technologies to reduce the impact of the consumption of scarce resources and materials;
  - Create a sustainable economic environment to attract progressive, innovative and dynamic businesses;
  - Create jobs in green-growth industries and services, with a focus on building green skills, innovation and knowledge;
  - Ensure greater energy security and more locally produced and controlled energy generation and distribution.

[24] See http://www.decc.gov.uk/en/content/cms/legislation/cc_act_08/cc_act_08.aspx

[25] Birmingham's Green Commission: Building a Green City, March 2013, Birmingham City Council

To coordinate Birmingham's reduction of CO^2 emissions by 60% by 2027 from 1990 levels, the Green Commission has developed a Carbon Roadmap. The four priority areas of the Birmingham Carbon Roadmap include:

- How Birmingham should in future be heated and powered;
- How we travel and get around the city;
- Improving the energy efficiency and affordable warmth of buildings;
- Creating decarbonised local energy generation capacity.

Whilst Birmingham's current emissions target will be largely driven by central government, there is still a significant contribution that can be made by the city, including identifying local opportunities to extract heat from industries or to use sources specific to local geography, including municipal waste.

- The Municipal Waste Management Strategy (2006-2026) defines the city's strategic vision for managing municipal waste. The current strategy vision is:

> "To run a city that produces the minimum amount of waste that is practicable, and where the remainder is re-used, recycled or recovered to generate energy. The materials recovered through composting, recycling, re-use and from the energy recovery process will replace the need for extraction of virgin materials.
>
> The waste management strategy will be sensitive to local needs and will provide a service to help Birmingham become as clean and green a city as it can be. Birmingham City Council and the Constituency partners will provide a service that citizens are pleased to support, and where there is malpractice or deliberate misuse of the service, that this is dealt with efficiently to maintain a clean, safe and healthy environment[26]."

2.4 Waste Streams

2.4.1 At the core of the challenge of a waste to resource strategy is understanding the differentials of waste streams, including existing and potential technologies employed to process waste stream into "resource", in terms of their economic, environmental and social implications. In many senses this presents an "unknown unknowns" challenge to the development of a future strategy.

2.4.2 During the course of our inquiry, the Committee heard about and explored many different waste streams and the technologies employed to process them. It is important to understand these and their potential in economic, environmental and social terms. The options available to the City Council in terms of waste disposal technologies are discussed in more detail in Chapter 4.

[26] Birmingham City Council (2006) Municipal Waste Management Strategy 2006 - 2026

2.4.3 DEFRA's *Waste Management Plan for England* (2013)[27] sets out the current position in terms of waste generated in England and how those materials are managed.[28] The Plan identifies four types of waste:

- Municipal waste – household waste and commercial waste similar to household waste;
- Industrial (including agricultural) and commercial waste;
- Construction and demolition waste;
- Hazardous waste.

2.4.4 The definitions and national volumes of each are explored below.

Municipal Waste

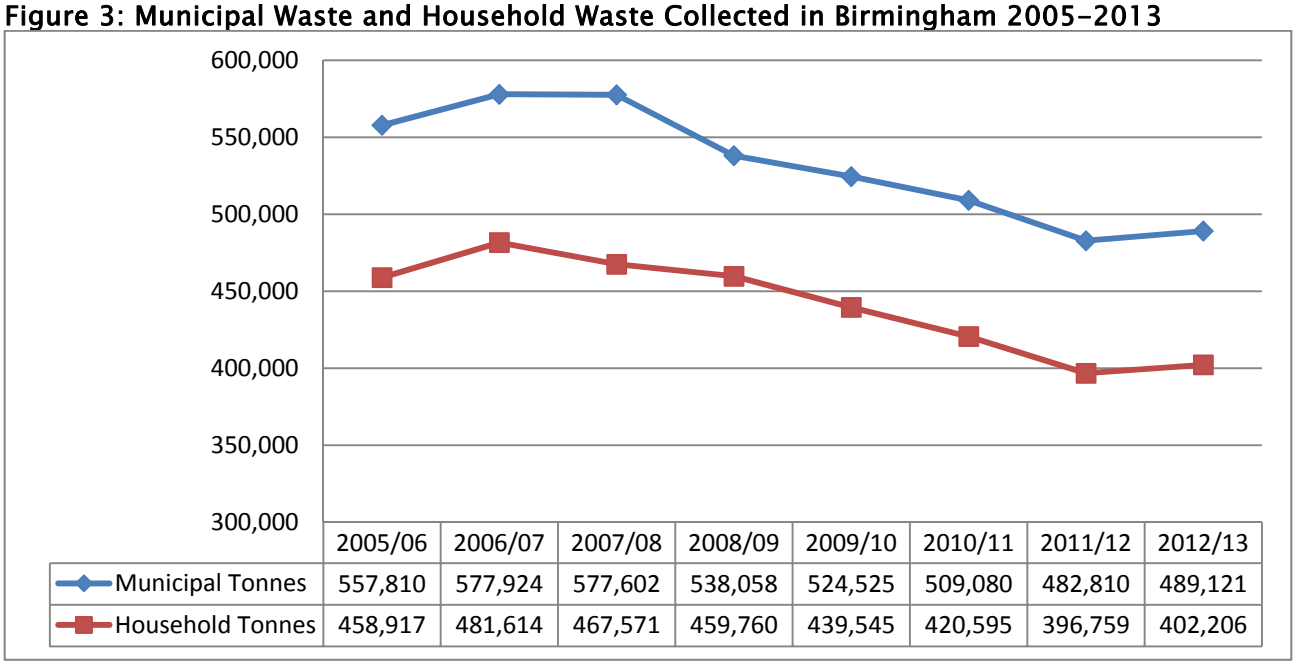
2.4.5 Municipal waste "encompasses all waste in the possession or under the control of a waste disposal authority or a waste collection authority, or agents acting on their behalf".[29] In other words it is all the waste that the council has a role in collecting and managing and it includes waste produced by households; schools and at other council premises; from commercial premises collected by the council; litter and street sweepings.

2.4.6 Figure 3 (below) shows that municipal waste levels in Birmingham have fallen from a peak of just under 578,000 tonnes in 2006/07 to just under 500,000 tonnes, albeit with a slight rise last year. Population growth and an increase in the number of households are only potential explanations for this – it may also be related to economic recovery. Waste management policies also have a critical role to play in determining waste volumes. Once the waste is collected, the guiding principle is the waste hierarchy (see Chapter 1) which encourages local authorities, through regulation and taxes, to recycle as much as possible. Within this very broad category of municipal waste are various waste streams that can be re-used or recycled:

- Biodegradable waste, including food and kitchen waste
- Paper/cardboard
- Metals/cans
- Clinical/medical waste
- Waste Electrical and Electronic Equipment (WEEE) – electrical appliances, TVs, computers, screens, etc
- Green waste
- Glass bottles
- Some plastics
- Fabrics/clothes
- Batteries

[27] DEFRA, Waste Management Plan for England, December 2013
[28] Once it has been finalised (following consultation), the updated policy will replace Planning Policy Statement 10 as the national planning policy for sustainable waste management
[29] DEFRA – Municipal waste is defined in 'NI Handbook of Definitions - Update (Published 13 Feb 2009)

Figure 3: Municipal Waste and Household Waste Collected in Birmingham 2005-2013



	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Municipal Tonnes	557,810	577,924	577,602	538,058	524,525	509,080	482,810	489,121
Household Tonnes	458,917	481,614	467,571	459,760	439,545	420,595	396,759	402,206

2.4.7 Most of these waste streams are recycled after (separate) collection in Birmingham, and this is explained in Chapter 3 alongside Birmingham's performance against the waste hierarchy.

Household Waste

2.4.8 A subset of municipal waste is household waste. This includes all waste and recyclate collected via kerbside collections from households, garden waste collections, all waste and recyclate collected at Household Recycling Centres (HRCs), litter and refuse (including street cleaning waste, park litter and gully sweepings), bulky waste collections and household clinical waste collections.

2.4.9 Nationally, in 2012/13, 22.6 million tonnes of household waste were generated in England. Household waste has been falling since 2007/8, on average by just over 2% per year, but is now starting to rise again.

2.4.10 As Figure 3 shows, this national trajectory is the same in Birmingham, where household waste rose last year after a five year fall. The bid submitted to the DCLG for the wheelie bin scheme was based on a 2% per year household growth rate. With waste minimisation efforts, the projection is that waste will grow at a rate of 1% per year until 2019. Demographic changes will also have an impact on waste (see section 2.5).

Council Generated Waste

2.4.11 Another segment of municipal waste is the waste that is generated by the City Council in carrying out its business, for example grass and tree cuttings from parks and waste from highways works. The City Council is also responsible for the collection and disposal of this waste, although the operation is sub-contracted.

2.4.12 The Grounds Maintenance contract awarded in 2009 clarified that parks waste remains the property of the City Council. The Committee considered the issue of **parks waste** in some detail, both green waste and timber:

- **Green waste**: comprises 3,000 to 4,000 tonnes per annum, and includes tree and shrub pruning, grass cuttings, leaves and old bedding plants. This is now transported to either Cofton or Bromford to be processed in to a product that is used as a soil improver in the Council's parks and flower beds throughout the City. There is potential for this product to be sold commercially but it requires investment to do so (to meet external standards and gain certification);
- **Timber**: sourced from both the city's highways contractor Amey or the non-highway providers take all the timber waste to Bromford. The Parks Service process the timber to produce wood chip. This wood chip is sent to a power station in Eccleshall to produce electricity. The annual tonnage of green waste is around 3,000 tonnes, mainly between October and April. The annual tonnage of timber is between 4,000–5,000 tonnes. The timber waste in both the highways PFI and grounds maintenance contracts remains in the ownership of the City Council.

2.4.13 The city's highways contractor Amey recycles most of its waste arising from the **highways** works, including excavated road material (cardboard, metals, lamps, IT and electrical equipment, woods, oils and liquids, white goods, wood, timber and green waste). Re-use of surfacing material is a standard industry practice.

2.4.14 There is a "FoamMaster" asphalt recycling plant at Bordesley Green, run in partnership with Tarmac. The plant takes waste material from road re-constructions, crushes it and mixes it with recycled pulverised fuel ash (PFA) to form a grade of material that is used in footway schemes. A Carbon Footprint Calculator has been developed that demonstrates the environmental benefits of such material processing.

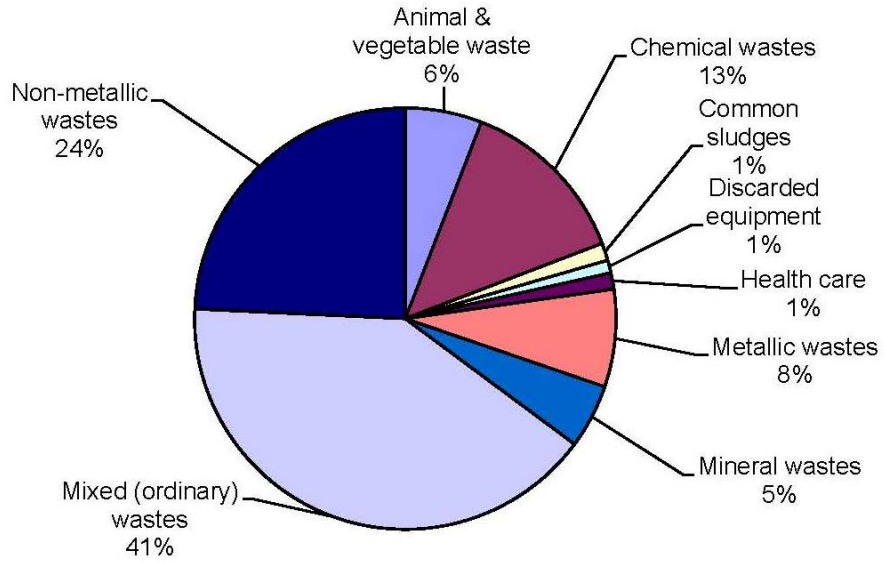
Commercial Waste and Industrial (including Agricultural) (C&I)

2.4.15 The Waste Management Plan (2013) indicates that commercial and industrial waste in the UK is decreasing and recycling is increasing:

	Tonnes generated	Recycling rate	Landfill rate
2002/03	67.9 million tonnes	42%	41%
2009	47.9 million tonnes	52%	24%

2.4.16 In 2006/07 it was estimated that 968,000 tonnes of Commercial and Industrial (C&I) waste arose in Birmingham. The breakdown is set out in Figure 4.

Figure 4: Breakdown of C&I Arisings in 2006/07 by Substance Oriented Classification in Birmingham[30]



2.4.17 Businesses are expected to make their own arrangements for the collection, treatment and disposal of their waste (under the Environmental Protection Act 1990). This means that they must:

- Ensure that a person or company that collects the waste is a registered waste carrier;
- Have a Duty of Care Certificate (which must be retained for 2 years) containing the description of waste collected for disposal, how it is contained, quantity of waste and where the waste will finally be disposed of[31];
- If businesses 'self-dispose' of waste they must be able to prove they have done so lawfully.

Construction, Demolition and Excavation Waste (CD&E)

2.4.18 The construction, demolition and excavation sector generated 77.4 million tonnes of waste in 2010 (down from 81.4 million tonnes in 2008) and so is the largest contributing sector to the total waste generation.

2.4.19 In 2006/07 it was estimated that over 1.65 million tonnes of CD&E waste arose in Birmingham.[32]

2.4.20 The Waste Management Plan reports that England and the UK are "already achieving an estimated 93% recovery rate of construction and demolition waste. This already exceeds the 2020 target of recovering at least 70% by weight, of non-hazardous construction and demolition waste."

Hazardous Waste

2.4.21 In contrast to other types of waste, the volume of hazardous waste is increasing:

[30] The Waste Capacity Study for Birmingham, 2010, Enviros Consulting
[31] The City Council offers a business/trade waste service – see http://www.birmingham.gov.uk/commercialwaste
[32] Waste Capacity Study, 2010

- Around 3.3 million tonnes of hazardous waste was generated in England in 2010;
- 3.9 million tonnes in 2011;
- 4 million tonnes in 2012.

2.4.22 This waste comes from six main sectors of industry: chemicals, oils, construction and demolition, waste and water treatment and general industry.

2.4.23 The Government's Hazardous Waste Strategy sets out the Government's policy on the management of this hazardous waste. The Strategy aims to continue to encourage policies which lead to reductions in hazardous waste arisings, and the wider application of the waste hierarchy to the management of hazardous waste.

2.5 The "Known Unknowns"

Volumes

2.5.1 Acknowledgement has been made of falling waste volumes, noting also that municipal waste volumes have risen in the last year. At the core of the challenge for a waste to resource strategy is the significant number of variables that are simply unknown, in terms of technological, environmental and financial data.

2.5.2 Veolia told us that what caused the previous national trend for falling waste volumes is not known – whether this is recession linked or a by-product of less packaging from manufacturers and more recycling. Veolia cautioned the Committee (in 2012) that:

> "It would be dangerous to assume that waste arisings will continue to fall at this rate and it is safe to assume that the City of Birmingham will continue to generate substantial amounts of waste and recyclates that require treating and processing."

2.5.3 There are also potential threats to recycling streams. In a recent article in the magazine Resource[33], the authors observed a reduction in recycling in some LA areas in 2012/13 and attribute this to less paper waste being generated (perhaps through increasing use of smartphones and tablets in place of newspapers and magazines) and lower garden waste volumes (due to colder weather that year).

2.5.4 There are other factors that, whilst they are fast changing, the general trajectories might be foreseeable. One of these areas is population growth. Considered against the projected population growth of 150,000 within Birmingham by 2031, and the consequential requirement to increase the number of households in the city, volumes of waste are likely to increase. The Council Business Plan and Budget 2014+ sets out the figures:

[33] Resource magazine, Spring 2014, Number 76

- Birmingham has a population of 1,085,400 (2012 mid-year population estimate);
- Since 2001 the population has increased by almost 100,000 and the Office for National Statistics (ONS) expect it to rise 85,800 to 1,160,100 between 2011 and 2021, an increase of 8%.[34]

Collection

2.5.5 While the Council is committed to providing a weekly waste collection service, not least by its undertakings in the Weekly Waste Collection Scheme (see Chapter 3) to do so until December 2017, the national and local landscape by 2019 is unpredictable. Before that most householders in Birmingham will be using wheelie bins and the effects of this on arisings and recycling volumes are only predictions. National information on the frequency of collection, and the ability to reduce and increase these, will be more widespread as more authorities move to different models. Furthermore the availability of finance for collections in the face of possible further rounds of budget cuts cannot be predicted.

Regulatory and Attitudinal Trends

2.5.6 Regulatory and attitudinal trends will have a further impact on volumes and types of waste arisings. The Waste Management Plan notes:

> "The way in which waste is managed has changed dramatically over the last twenty years in the UK, as have attitudes towards waste management."

2.5.7 The 2005 Courtauld Commitment is a voluntary agreement for improving resource efficiency and reducing waste within the UK grocery sector, with a view to reducing the amount of packaging in household waste. And more recently, the Queen's Speech in May 2014 heralded the introduction of charges for plastic bags in English supermarkets.

2.5.8 Whilst this initiative may have helped to drive down municipal waste volumes in the past ten years, the pace and extent to which it may continue is unknown.

2.5.9 Equally, the rate and extent of citizen buy-in, participation and attitudinal shifts are important, as are how they interact. These are not only variables that can be charted, predicted or influenced by local authority actions alone and as such also remain a "known unknown", flexibility for which will be the key to the viability of any future strategy.

2.5.10 These are our "known unknowns" in this inquiry – the factors that will need to be taken into account and therefore demand that flexibility remains key to any future strategy.

[34] Council Business Plan and Budget 2014+, Cabinet, 17th February 2014

3 Where We Are Now

3.1 Overview

3.1.1 This chapter outlines the arrangements for waste collection and disposal in Birmingham.

3.2 Responsibilities

Householders

3.2.1 Householders have a responsibility to ensure that household waste is properly disposed of (section 34(2A) of the Environmental Protection Act 1990).

The City Council

3.2.2 Birmingham City Council is a Waste Collection Authority (WCA) and a Waste Disposal Authority (WDA) within the meaning of the Environmental Protection Act 1990 (see Box 1):

- As a WCA, the City Council must arrange a regular collection of domestic waste for which it cannot make a charge as the cost is covered by the Council Tax;[35]
- As a WDA, the City Council must manage the waste collected by the local authority. This is currently contracted out to Veolia Environmental Services Birmingham (VESB).

Whose Responsibility and When

3.2.3 These statutory responsibilities help to explain who is responsible for waste, its storage and disposal, at different stages.

3.2.4 Broadly, in so far as waste is placed in a container on someone's property it remains the responsibility of, and owned by, that person until it is collected by the City Council.

3.2.5 Under the City Council's current arrangements, the City Council owns and is responsible for the waste from point of collection to delivery to a waste transfer station (or depot). At that point, it becomes the responsibility of Veolia, as the City Council has contracted out its waste disposal functions under the contract until 2019.

[35] A charge can be made for green waste under the Controlled Waste Regulations 2012

Box 1: Statutory Duties: Waste Collection

Section 45 of the Environmental Protection Act 1990 provides that it is the duty of each Waste Collection Authority (WCA) to arrange for the collection of household waste in its area. Section 45A provides that arrangements are also made for the collection of at least two types of recyclable waste together or individually separated from the rest of the household waste.

Section 46(1) specifies that where a WCA "may, by notice served on him, require the occupier to place the waste for collection in receptacles of a kind and number specified".

Section 46(2) states that the kind and number of the receptacles required should be "reasonable". Separate receptacles / compartments may be required for waste which is to be recycled and waste which is not.

In making requirements with regards to receptacles, the WCA may make provision with respect to:

a. The size, construction and maintenance of the receptacles;

b. The placing of the receptacles (and access to the receptacles) for the purpose of emptying them;

c. The placing of the receptacles for that purpose on highways;

d. The substances or articles which may or may not be put into the receptacles or compartments of any description and the precautions to be taken where particular substances or articles are put into them;

e. The steps to be taken by occupiers of premises to facilitate the collection of waste from the receptacles.

The legislation further provides that a person who fails, without reasonable excuse, to comply with any requirements imposed under subsection (1) above shall be liable to a fine. Further, a WCA is not obliged to collect household waste that is placed for collection in contravention of a requirement under this section.

Statutory Duties: Waste Disposal

Section 51(1) states that the Waste Disposal Authority (WDA) must arrange for the disposal of the waste collected in its area. Section 55 provides for the waste disposal authority to:

a. Make arrangements to recycle waste for which the authority has duties under section 51(1) above or agrees with another person to undertake its disposal or treatment;

b. Make arrangements to use waste for the purpose of producing from it heat, electricity or both;

c. Buy or otherwise acquire waste with a view to its being recycled;

d. Use, sell or otherwise dispose of waste or anything produced from such waste.

The 2005 Clean Neighbourhoods and Environment Act abolished the requirement for Local Authorities to contract out their waste disposal operations (section 47).

Household Recycling Centres: Section 51 (1) states that the WDA must arrange for places to be provided at which residents in its area may deposit their household waste and for the disposal of waste of that waste. These should be situated within the local authority area or reasonably accessible to residents; open at all reasonable times; and free of charge to residents.

3.3 Waste Collection

Why Look at Collection Methods?

3.3.1 While this inquiry does not focus upon collection, it is vital that the challenges and opportunities of the collection service are factored into a future waste strategy as these will to some extent determine parameters for the period beyond 2019.

3.3.2 Collection methods are important because they influence both the volume and type of waste and recyclate collected. Frequency, capacity, separation and co-mingling are key to the interest of partners processing waste into resource, as was underlined in evidence to this Committee:

> "The most important factor in our successful on-going partnership is the City Council's ability to collect household papers separately from other recyclable material and deliver it direct to our mill. This means that the material is virtually uncontaminated, particularly by glass, which would cause enormous problems in our recycling process. We would strongly urge the City Council to continue separate kerbside collections of paper." (Smurfit Kappa)

Waste and Recycling Collection in Birmingham - Kerbside

3.3.3 City Council plans to change from a black sack residual waste collection and container-based recyclate collection to a wheeled bin collection were backed and co-funded by a successful bid under the Department for Communities and Local Government's (DCLG) Weekly Collection Support Scheme. This change was necessary for the city to be able to guarantee weekly residual waste collections for the next five years, for which Birmingham received £29.785m over three years.[36]

3.3.4 This means that by 2019, all suitable households in Birmingham will have a kerbside wheelie bin collection for residual waste and recyclate (those deemed unsuitable properties for wheelie bin collection will remain on a sack collection). Green waste will also be collected in a wheelie bin on payment of a charge. Wheelie bins were introduced in two pilot wards of the city, with a phased roll-out across the rest of the city taking place during 2014 and 2015. Box 2 sets out the details.

[36] Cabinet Report of 16th September 2013

Box 2: Wheelie Bin Collection of Waste and Recycling in Birmingham

All properties are to be assessed against agreed criteria for their suitability to accommodate a wheelie bin collection service. Where a wheelie bin is deemed to be appropriate, the property will be issued with:

- A 240 litre grey bin with blue lid containing a 55 litre insert pod for **recycling**. The bin is collected fortnightly. Households can request an additional bin for recycling:
  - The bin with the blue lid is for the disposal of **mixed materials (glass/cans/plastic bottles)**. The plastic collection recently expanded and now includes: Plastic bottles of all types; yoghurt pots, margarine tubs, ice cream tubs, plastic trays (e.g. from chocolate and biscuit boxes) that are not black in colour, trays from meat and fish, fruit and vegetable punnets, all bottle tops, lids and triggers, cream and custard pot, soup pots, instant noodle pots, tubs for dishwasher and laundry tablets (The following items are still not accepted: hard plastic items eg toys, washing-up bowls, tupperware lunchboxes etc; black plastic, plastic film or wrappers, plastic bags or black sacks, expanded polystyrene, food waste / general rubbish);
  - The pod is used for paper and card recycling.
- A 180 litre wheelie bin (grey) for the disposal of **residual waste**. The bin is collected weekly. Larger sized residual waste wheelie bins will be available for larger households: households of six or more people can request a 240 litre residual waste wheelie bin; households of nine or more people may request a 360 litre residual waste wheelie bin. Residual waste not placed in the wheelie bin ("side waste") will not be collected except at Christmas and other similar religious festivals; and where there have been disruptions to the service (e.g. during bad weather).

Flats (with four or more households per property) will have communal facilities, and the Council will work with residents/managing agents/landlords to put these in place.

Where it is not practical to supply a wheelie bin to a property, for example, because of steep steps or a steep slope, an alternative sack service will be provided.

All bins have an identification chip, known as Radio Frequency Identification (RFID), which contains a Unique Reference Number to identify the bin as belonging to a particular property.

For **green waste collections**, a wheelie bin and 20 fortnightly collections will be provided on payment of a £35 charge.[37] The wheelie bin is grey with a brown lid, has an identification chip fitted and the capacity to hold 240 litres of green recycling. The wheelie bin is owned by the Council; the charge is for the collection service. Should a resident move house part way through the year, the wheelie bin will remain with that house and the service will be provided for the new occupants.

[37] Customers who subscribe to this service after 31 July 2014 will pay a half-year fee of £17.50; they will be eligible to receive the remaining scheduled collections until the service ends in November. There are discounts available for those ordering on-line.

Waste and Recycling Collection in Birmingham – Other

3.3.5 As well as kerbside collections, the City Council also collects waste in other ways:

- Via the five Household Recycling Centre (HRCs) – the total collected by these for 2012/13 was 64,961 tonnes (residual: 41,902 tonnes; recycling: 23,059 tonnes). HRCs are discussed further in Chapter 4;
- Via over 400 bring bank sites around the city for recycling a number of items, including clothes, bottles, paper and cardboard. The number in each ward is set out in Appendix 3; over 9,500 tonnes were collected from bring banks in the 2013 calendar year;
- Through a "bulky waste" collection scheme (for which there is a charge): 8,068 tonnes were collected in 2012/13;
- Through a clinical waste collection scheme from the kerbside; the service is mainly self-referral into the Contact Centre or via the web, following advice from a medical practitioner who provides information on the service run by Birmingham City Council. The contact centre number is also displayed in doctors' surgeries, clinics, health centres and hospitals within the Birmingham area. There are three types of clinical waste:
  - San-Pro waste (sanitary products, adult nappies, disposable gloves, disposable aprons etc.) is presented in tiger stripe bags (previously yellow sacks). San-pro waste will be collected as part of the residual household collections on implementation of wheelie bins;
  - Hazardous waste (blood, body tissue, skin, wound dressings, dialysis materials etc) collected in orange sacks;
  - Needles and sharp items are collected in sealed lid sharps boxes.

  The number of sacks (tiger stripe and orange) collected in the 2012/2013 period was 157,645 and sharps boxes for the same period was 15,103. The total tonnage for the service for this period was 522 tonnes. The number of customers (as at March 2013) was 1,662; the number of new customers has risen in the last six months; the numbers fluctuate due to the ad-hoc nature of some clients who come onto and leave the service due to short term illnesses or medications required for a limited period.

3.3.6 Meetings are scheduled with FWM officers and NHS colleagues to consider the future of hazardous waste (orange sacks and sharps boxes) especially in the area of responsibility for collection and funding of the service.

3.4 Waste Disposal

3.4.1 In 1994 the Council entered into a 25 year contract with Veolia Environmental Services Birmingham (VESB) to manage the waste for which it has statutory responsibility (see Box 1 page 34). The contract includes:

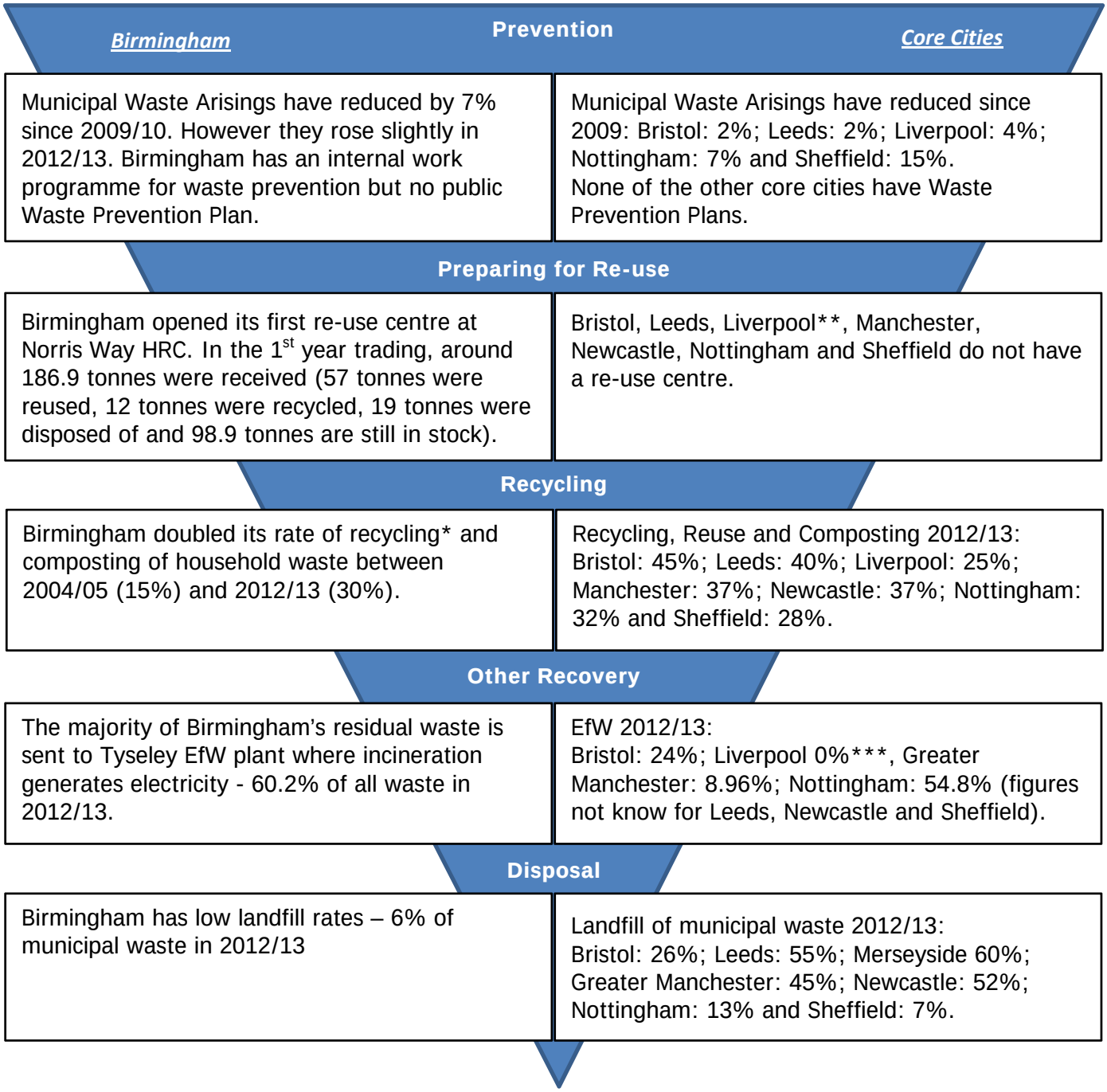
- Treatment and disposal of residual waste – mainly through the financing, operation and maintenance of the Tyseley EfW facility;
- Marketing of the electricity generated at the Tyseley EfW plant;
- Operation and maintenance of the council's five HRCs;
- Operation and maintenance of the council's transfer stations (located at three of the HRCs);
- Composting of green waste *(an amendment to the original contract*);
- Processing and marketing of collected recyclable material *(an amendment to the original contract*);
- Recycling of street sweepings *(an amendment to the original contract*);;
- Miscellaneous other minor services.

3.4.2 After municipal waste is collected via the methods described in the previous section, it is taken to a waste transfer station or depot for bulking and transporting on to processing plants – these are owned and operated by Veolia. The vast majority of residual waste is transported to Tyseley EfW plant, where electricity is generated from incineration. Paper and card recyclate is transported directly to Smurfit Kappa's paper mill in Nechells where it is processed. Other recyclate is sent to a MRF near Wolverhampton for sorting and selling on.

How Birmingham Is Performing

3.4.3 The Waste Hierarchy, set out in Chapter 1, provides an effective measure against which to assess Birmingham's performance in regard to a waste to resource strategy.

Figure 5: Birmingham's Performance against the Waste Hierarchy[38]



* Reuse and composting is included within this national indicator for reporting.

** Liverpool does not have a reuse centre and all re-use tonnages go to either the bulky waste contractors re-use shop or used via the contractor for crisis furniture.

***Liverpool do not have an EfW plant at the moment, a contract has been signed with SITA to build an EfW plan on Teeside for most of Merseyside's residential waste from 2016.

[38] Figures from 2012/13 Council Business Plan Measures - End of Year Performance Monitoring and 2013/14 Council Business Plan Targets, Cabinet 24 June 2013

Waste Prevention

3.4.4 The concept of waste prevention focuses on generating less material likely to become waste, by using less material in design and manufacture, keeping products for longer, and using less hazardous materials. Waste prevention does not include waste management activities such as recycling. The revised EU WFD does not set any waste prevention targets, but it does oblige Member States to establish a waste prevention programme within five years of its coming into force. The Government published its waste prevention programme in December 2013: *Prevention is better than cure; The role of waste prevention in moving to a more resource efficient economy*.

3.4.5 Reducing waste will yield the greatest environmental and financial benefits. Birmingham does have a waste reduction target in the 2014 Council Plan, and an internal work programme for waste prevention. However, there is no public Waste Prevention Plan. Whilst this reflects the difficulties local authorities have in measuring and influencing waste prevention, the Waste Prevention Programme does note that 50% of local authorities now have a waste prevention plan.

3.4.6 Some local authorities are making real improvements: the Merseyside and Halton Waste Partnership secured first place in the 'Best Waste Minimisation or Prevention Project' at the Local Authority Recycling Advisory Committee (LARAC) Celebration Awards 2013. The project successfully reduced household waste by 16,000 tonnes and ran an awareness campaign reaching 1.5million residents. The judges said it 'demonstrated clear savings for the councils involved with an impressive tonnage of material collected across Merseyside'.[39]

Re-Use

3.4.7 Improvements in levels of **re-use** are a significant contributor in minimising waste. As noted in the previous Scrutiny Review into the Municipal Waste Strategy (2012)[40], effective measures for re-use strategies within local authorities are challenging. To effectively measure re-use, a mechanism is required to take account of activity such as donating to charity shops and using sites such as ebay or Freegle.

3.4.8 However, it was also recognised that there was potential to increase re-use in the city and good practice the City Council could draw upon. The review recommended a target was set for re-use, after baseline data was established. Whilst this baseline data remains a challenge, the City Council opened the first re-use centre in the Norris Way HRC in 2012. This is a two year partnership between Jericho, Veolia and the City Council. However the future funding or roll out of this initiative is not yet clear.

3.4.9 As part of this inquiry in September 2013 Members of the Committee visited the reuse centre. Here Members were informed that the Waste & Resources Action Programme (WRAP) had set

[39] http://www.localgov.co.uk/Local-authority-waste-project-scoops-top-prize/29047. The partnership consists of Merseyside Recycling and Waste Authority and Halton, Knowsley, Liverpool, Sefton, St Helens and Wirral council
[40] Scrutiny Review: Refresh of the Municipal Waste Strategy, April 2012

targets as a condition for funding: 27.3 tonnes in year one. These targets have been exceeded and for their first year trading (Feb 2013-Feb 2014), with 187 tonnes received, of which 57 tonnes have been re-used, 12 tonnes recycled, 19 tonnes disposed of and 99 tonnes remained on site.

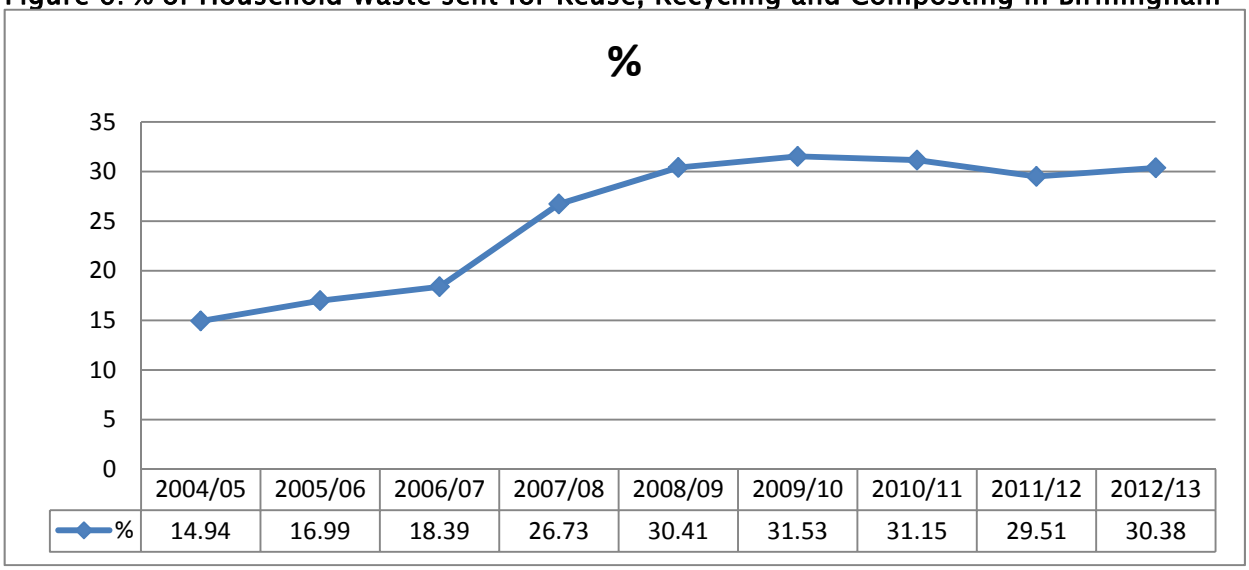
Recycling

3.4.10 Recyclate is taken to waste transfer stations for bulking and onwards transportation to the relevant treatment/processing facility. Recyclate in Birmingham consists of three streams:

- Paper and card – processed at the Smurfit Kappa paper mill in Nechells, which is a significant asset for the city in terms of contributing to local employment opportunities and underpinning the city's responsiveness to the proximity principle. The location of the plant, which celebrated its 150th anniversary in 2012, means that none of the paper collected for recycling travels more than 12 miles from collection point to processing, minimising the "carbon footprint" of paper recycling in Birmingham. In terms of local employment, there are 116 full time employees at the mill including four engineering apprentices at present (March 2014). Smurfit Kappa hope to start two new apprenticeships in September 2014. Additionally, the Birmingham collection depot employs 21 full time positions;
- Mixed materials (glass, cans and plastic) – transported to Four Ashes Materials Recovery Facility, run by Veolia;
- Garden waste – which goes to composting facilities near the city and is windrow composted on a large scale to be used for agricultural and landscaping purposes.

3.4.11 **Recycling rates** have doubled in Birmingham between 2004 (15%) and 2013 (30.4%). However the rate of progress has slowed in the last two to three years. The volume of recyclate in 2012/13 is now around 72,000 tonnes of dry recyclate and a further 53,000 tonnes of composting.

Figure 6: % of Household Waste sent for Reuse, Recycling and Composting in Birmingham



	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
%	14.94	16.99	18.39	26.73	30.41	31.53	31.15	29.51	30.38

3.4.12 The statistics on recycling performance in Birmingham up to 2012 provide useful indicative information on how Birmingham compares to other Core Cities and West Midlands Metropolitan Councils. Household waste arisings per head of population has fallen in Birmingham in 2009, when it was amongst the highest of all authorities, to being one of the lowest in 2012/13 (when only Manchester and Sheffield collected fewer kilograms of waste per head of population).

3.4.13 Whilst recycling rates within all large urban authorities tend to have lower than average recycling rates, Birmingham had the third lowest recycling rate amongst the core cities (with only Liverpool and Sheffield recycling a smaller proportion of their waste) and the lowest in the West Midlands Metropolitan region.

3.4.14 Please refer to Appendix 2 for further information on the performance and volumes of waste and reycling in the Districts and Wards.

3.4.15 Higher rates are undoubtedly achievable. Local authorities in Wales are now recycling more than it disposes of by other means – meeting the 2020 target seven years early. The European experience also shows that recycling high levels is achievable. Germany, Holland and Belgium all have around 60% recycling but also have 40% Energy Recovery Facility (ERF) treatment meaning landfill inputs are negligible. Sweden and Denmark recycle c.50% but also have 50% ERF treatment.

3.4.16 The European Environment Agency's 2013 report: *Managing Municipal Solid Waste (MSW) — a review of achievements in 32 European countries* key findings include:

- Five countries (Austria, Belgium, Germany, the Netherlands and Switzerland) have already reached the 50% recycling target.
- Six countries (Ireland, Italy, Luxembourg, Slovenia, Sweden and UK) will achieve the 50% by 2020 if they can maintain the annual rate of increase in recycling that they recorded in 2001–2010.

3.4.17 The factors and initiatives for four of the top European countries that had already reached the 50% recycling target in 2010 are provided in Figure 7 below.

Figure 7: Four European Countries that have already reached the 50% recycling target (2010)

Austria	Germany
• Austria has increased recycling of MSW to, approximately **63%** of MSW generated.[41] This is the highest level in Europe; • In Austria, the overall performance in terms of MSW recycling has been very stable at a very high level over the last decade in spite of some 7% growth in generation of MSW over the period of 2001-2010; • Austria has reduced biodegradable municipal waste landfilled to below 3% of the generated amounts in 1995 already by 2008. • Austria has a separate collection policy for biogenic waste since 1995. In 2008, about 105 kg/capita of biogenic waste were collected separately; • Biological recycling has been at a high level, reaching approximately 33% of the generated MSW by 2010; • Since 1991, all municipal waste incineration plants feature energy recovery for district heating.	• Recycling has increased from 48% of MSW generated in 2001 to **62%** in 2010. The EU target for 50% recycling by 2020 has therefore already been met; • There was no increase in the recycling level of MSW between 2006 and 2010, whereas incineration has increased; • The 2016 target for biodegradable municipal waste sent to landfill was met in 2006; • There is a long tradition of national waste strategies and waste management plans in the federal states; • A ban on landfilling un-pretreated MSW, producer responsibility and a focus on separate collection have proven to be important policy initiatives; • The latest initiative is the introduction of the so-called recycling bin that aims to increase recycling of plastics and metals from households, and mandatory separate collection of bio-waste by 2015.
Belgium	**Netherlands**
• Belgium has already met all the diversion targets for biodegradable municipal waste of the EU Landfill Directive and the 50% recycling target for MSW of the EU Waste Framework Directive; • The recycling rate has increased from 50% of the generated amount of MSW in 2001 to 58% in 2010. • Significant historical differences for MSW recycling rates exist between Brussels Capital Region, Flanders and Wallonia; Recycling rates for material and organic recycling are highest in Flanders throughout the period 2001-2010 whereas Wallonia has made most progress; • Belgium has one of the highest landfill taxes and landfill tax increases in Europe, combined with a landfill ban, which seem to have effectively diverted waste from landfill to recycling; • Use of a portfolio of policy instruments to achieve high recycling rate, although not uniformly implemented across the different Belgium provinces; • Mandatory waste separation by householders with fines up to €625 for non-compliance from 2010 (Bruxelles Capital Region); • Mandatory quality thresholds for separately collected waste (Flanders); • Mandatory quantity thresholds for residual waste (Flanders).	• Recycling is the most preferred option for MSW management in the Netherlands. Already lying at 45% in 2001, recycling of MSW in the Netherlands reached the 50% recycling target given in the Waste Framework Directive, by 2009 (**51%** in 2010); • A landfill ban covering 35 waste categories was already introduced in 1995; • A landfill tax was introduced in 1995 as well, considerably reducing the amounts of municipal solid waste (MSW) landfilled. In 2002, there was a steep increase of the tax level which kept increasing marginally the following years. Finally a sharp increase in 2010 made the landfill tax in the Netherlands the highest in Europe. By 2012, the tax was repealed as the low level of landfilling rendered the tax administratively bothersome; • The first National Waste Management Plan set the framework of future waste management in the Netherlands and introduced the control of waste policies under a national perspective. • The second National Waste Management Plan introduced a target to increase the recycling of household waste to 60 % by 2015.

[41] Note: According to comments from the Austrian UBA, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category 'compost'. In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generation) are not compost but waste to be landfilled. Thus, 7 % of MSW generation is deducted from organic recycling and added to landfilling for all years in all relevant graphs and figures.

3.4.18 Understanding recycling performance in Birmingham is assisted by analysis of recycling performance rates across all 40 wards – see Figure 8 below.

3.4.19 Five wards had a recycling rate above 40% (the four Sutton Coldfield wards – including Sutton Four Oaks with a recycling rate of 53.4% – and Edgbaston, 41.5%). Fourteen wards had a recycling rate above 30% (Harborne 35.4%, Quinton 32.4%, Erdington 35.3%, Stockland Green 32.1%, Hall Green 33.6%, Moseley & Kings Heath 34.4%, Ladywood 31.3%, Northfield 31.7%, Handworth Wood 32.9%, Oscott 35%, Perry Barr 31.1%, Bournville 36.1%, Brandwood 31%, Sheldon 31%).

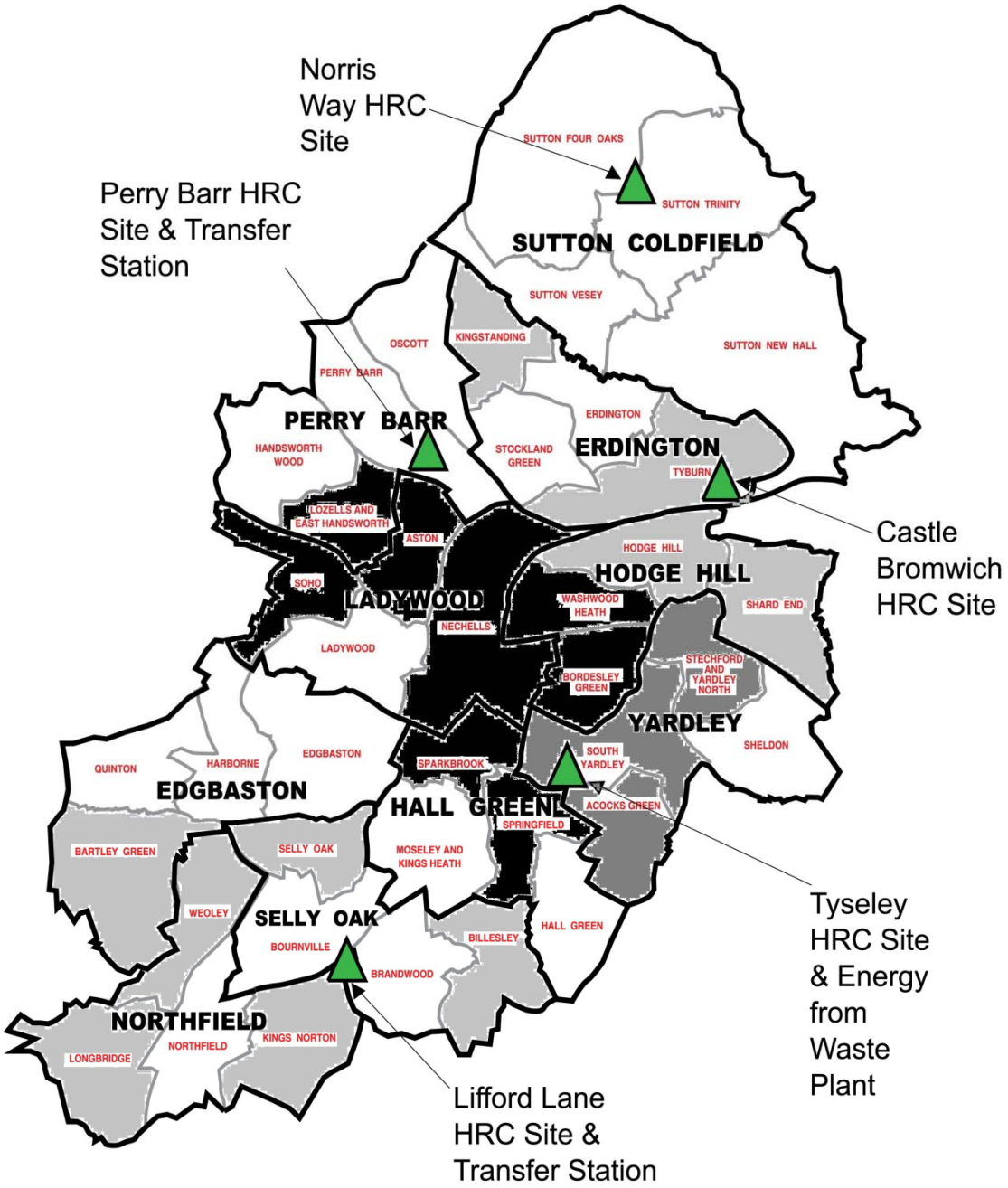
3.4.20 In contrast, eight wards had a recycling rate under 20% (Sparkbrook 11.4%, Lozells & East Handsworth 11.9%, Washwood Heath 12.9%, Bordesley Green 13.2%, Soho 15.1%, Nechells 15.3%, Aston 15.8%, Springfield 18.5%). It also suggests a link between those wards with higher than average populations and indices of multiple deprivation have the lowest recycling rates. Concurrently, wards with higher rates of recycling are amongst the more affluent.

3.4.21 The caveat to these ward figures are that they do not include:

- Specialised rounds, such as large container collections from flats and 'alleycat' rounds for difficult to access properties (narrow streets etc)
- Where collections cross ward boundaries or are mixed with trade waste collections

3.4.22 Nonetheless, the data presents the potential to increase rates of recycling on the basis that greater volumes of waste arisings because of larger populations in these areas should generate greater levels of recycling.

Figure 8: Birmingham – Total % Recycled (Rolling 12 months July 2012 to June 2013)



% Recycled: Totals rolling 12 months July 2013 to June 2013									
10% – 20%		20% – 25%		25% – 30%		30%+			

3.4.23 As noted above, at the time of writing, the city is in a period of transition as wheelie bin roll-out is commencing. The historical information we have on performance and volumes of waste collected does not yet reflect the change to wheelie bin collections. Yet this change is likely to be significant

and the introduction of wheelie bins is expected to have a positive impact on recycling rates, particularly as the city will have moved from the ability of householders to put unlimited black sacks of residual waste out for collection to wheelie bins where "side waste" will not be collected except in specific circumstances (such as Christmas and other similar religious festivals; and where there have been disruptions to the service, e.g. during bad weather; see Box 2, page 36).

3.4.24 The City Council's own projections of waste and recycling following the introduction of wheelie bins suggest that recycling will rise to around 49% by 2019. Landfill would reduce by 24% (down to under 6% compared to the 2012/13 figures). These projections are based on the initial results from the pilots and are supported by the experience of other local authorities that have already introduced wheelie bins and that expected by professional organisations e.g. WRAP.[42] Box 3 below provides the wheelie bin pilot results (September 2013).

Box 3: Wheelie Bin Pilot Results

The Wheelie Bin pilot results were submitted to the Committee in September 2013. The pilots were conducted in Harborne (7,098 properties) and Brandwood (8,916 properties) wards, selected on the basis that they comprised a range of different household types which reflected the generality of housing types across the City.

WRAP (Waste and Resources Action Partnership) were engaged to assess the impact of the pilot on kerbside yields of dry recycling and residual waste. A mean reduction in residual waste yields of 21.9% was achieved in Brandwood and 25.59% in Harborne (based on mean arisings over the sample period).

Paper and card yields increased by 0.68 kg/hhd/collection in Brandwood, (equivalent to a 28.52% increase); and by 0.09 kg/hhd/collection in Harborne (the equivalent of an 11.92% increase). Pre–trial paper yields were notably greater in Harborne than in Brandwood, therefore a smaller increase might be expected in this ward.

Plastic bottles, tins and glass yields increased by a 58.74% in the Brandwood ward in trial period (a 1kg/hhd/collection increase). The report on the findings notes that container yields in Harborne were significantly affected by anomalous tonnages recorded for week commencing 29th July 2013. Using the total data set it appears that there has been an increase of 0.26 kg/hhd/collection in container yields in the trial phase. This equates to a 14.81% increase in container tonnage. This is significantly less than the increase seen in the Brandwood ward. If the data from week commencing 29th July is excluded as anomalous, this reduces confidence in the analysis carried out, however the average yield of containers increases to 3.03 kg/hhd/week, representing a 21.96% increase in tonnage. As with the paper and card, Harborne ward performed better in this area in the pre-trial phase so the increase seen is smaller.

Levels of street cleanliness improved by 54% in Brandwood and 50% in Harborne.

Source: Wheelie Bin Consultation and Pilots, Report to the Transport, Connectivity & Sustainability O&S Committee, September 2013

[42] Wheelie Bin Business Case, report to Cabinet, 16th September 2013

Other Recovery – Energy from Waste

3.4.25 The majority of residual waste collected in Birmingham goes to the Tyseley EfW Plant to be incinerated to generate electricity. The plant has an operating capacity of around 350,000 tonnes of waste per annum from which it generates about 25 mega-watts of electricity per annum. This is exported to the National Grid (providing the equivalent power for around 40,000 homes, which represents c.10% of Birmingham's housing stock). Veolia told us that:

> "The environmental impacts of residual waste treatment are also important and it has been independently verified that Tyseley ERF saves 40,000 tonnes of carbon every year through avoiding landfill."

3.4.26 The Tyseley EfW plant produces around 82,000 tonnes of bottom ash, the vast majority of which was re-processed at Castle Bromwich for road aggregate materials.[43] Tyseley EfW plant is located in Birmingham, thereby reducing the amount of transportation required (whereas currently the plastic, cans and glass recycling is transported to near Wolverhampton for sorting and then onto other destinations for treating and processing).

3.4.27 Tyseley dominates all discussion of waste disposal in Birmingham as the key element of Birmingham's waste disposal infrastructure. It is the reason for the low landfill rates the city currently enjoys. Moreover, the Tyseley facility reverts to City Council ownership with the expiry of the contract in 2019, potentially becoming an asset as it is expected to have a remaining lifespan of around 15 years (though this needs to be validated through a condition survey).

3.4.28 Furthermore, the Tyseley EfW plant contributes to the city's adherence to the proximity principle, as another local asset for waste to resource management. There is a reduction in transport costs and emissions, thus reducing the carbon footprint of Birmingham's waste. Tyseley also provides local employment (around 60 people at the Tyseley plant).

3.4.29 These benefits do not accrue only to the plant but to the area through the Tyseley Environmental Enterprise District (TEED – see Chapter 5). Veolia is also a significant local employer. Veolia employ close to 200 people as a business in Birmingham. They have a range of training and apprenticeship schemes currently running in the Group, and recruit a number of technical apprentices each year for a three year period to feed employment opportunities in the ERFs and other technical plants. They also employ 12 HRC apprentices in Birmingham – previously long term unemployed people and give them NVQ training over a three year period. Some of these are then recruited into full time jobs at the end of their apprenticeship and others are given assistance to find other employment. Veolia also has its own internal training facility (Veolia Campus in Staffordshire) where a significant amount of in house training is delivered direct to employees.

[43] Evidence from Fleet & Waste Management Service, November 2012; this site is threatened by the HS2 proposal for the new line to come through the site – Response to consultation on HS2 Formal Environmental Statement (Cabinet, 17th February 2014)

3.4.30 Whilst sitting relatively low in the waste hierarchy, it is worth underlining that the potential for heat capture and energy generation is widespread in European Member States with higher environmental performance than the UK (for example around 40% EfW in Germany, Holland and Belgium; up to 50% in Sweden and Denmark).

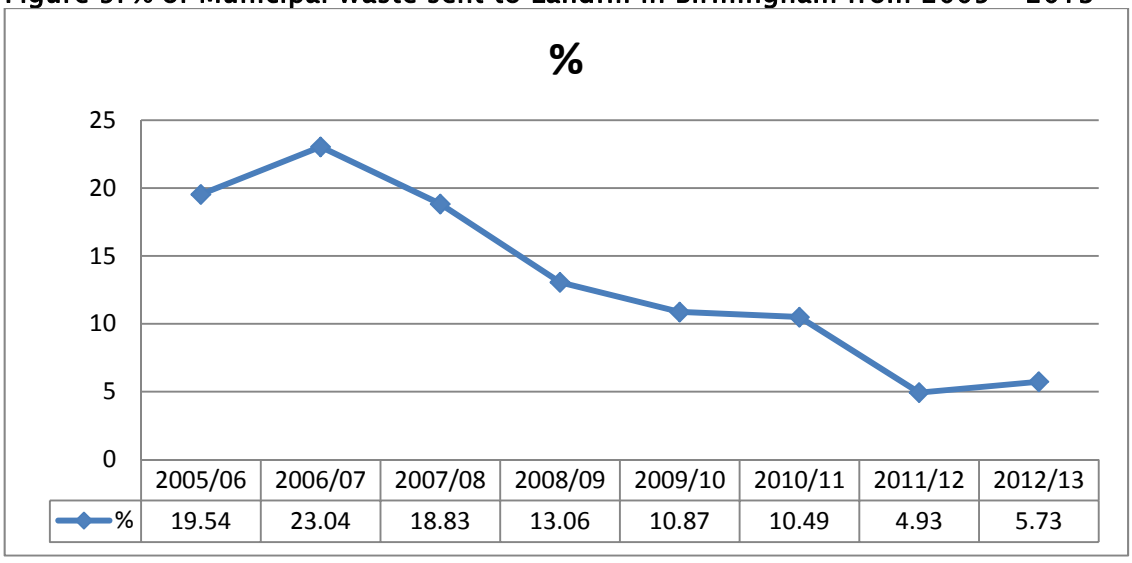
Landfill

3.4.31 The small percentage of Birmingham waste sent to landfill is managed by Veolia. Under the contract, Veolia makes its own landfill arrangements. At the time of writing, the following landfill sites were being used:

- Linghall Landfill, Rugby;
- Albion Landfill, Swadlincote;
- Sandy Lane Landfill, Bromsgrove;
- Candles Landfill, Telford;
- Minosis (Fly Ash Only), Winsford, Cheshire.

3.4.32 Proportions to landfill tend to increase when there is a problem with the Tyseley EfW plant or it is closed for maintenance.

Figure 9: % of Municipal Waste sent to Landfill in Birmingham from 2005 – 2013



	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
%	19.54	23.04	18.83	13.06	10.87	10.49	4.93	5.73

* Tyseley EfW did not shut down in 2011/12 for maintenance, hence the figure for 2011/12 year is slightly lower.

3.4.33 Whilst performance indicators for Birmingham demonstrate significant room for improvement with regards to recycling, the city's performance for landfill rates is impressive, especially in comparison to other core cities. Landfill in Birmingham is the lowest of the core cities and compares very favourably with others: for example Leeds landfills 55% and Newcastle 39%. In the West Midlands, landfill is generally low (with the exception of Walsall, which had a rate of 49% in 2012/13).

4 The Options

4.1 Overview

4.1.1 This chapter considers the options for a future strategy, looking at:

- What should be the focus of waste strategy post-2019?
- What should be done with the infrastructure already in existence – the Tyseley issue;
- What could the next phase of waste disposal and recycling operations look like?
- What approach should be taken in terms of contracting with partners – commercial or otherwise?

4.2 A New Strategy for 2019

4.2.1 The opportunity afforded by the ending of the current waste disposal contract is that the city can reshape how waste is approached in the city. That means doing more than just refreshing the current Municipal Waste Strategy (due to expire in 2026 – see Chapter 3). A fresh debate is needed on the content and direction of the strategy, which pushes boundaries in order to accommodate future challenges when they can be planned for.

4.2.2 The evidence received from visiting Manchester's Waste Disposal Authority underlined this point. Before any contract negotiations started, Greater Manchester authorities agreed a strategy, with the political resolution to put "our aim is zero waste" at the heart of the strategy. Manchester's advice was that there should be a defining priority. This will drive the strategy and act as a governing principle when conflicting demands emerge.

4.2.3 Such guiding principles for Birmingham could relate to minimising waste, maximising environmental benefits or keeping costs down. Whilst the choice of an overriding principle is inherently political, there is a need to recognise that the decisions to be made are diverse and challenging. Setting this political set of guiding principles would ensure a coherent and transparent approach to any new waste disposal arrangements and provide a mechanism to negotiate the process.

4.2.4 It is not the purpose of this inquiry to determine those principles but the inquiry report does at least set out some options:

- **"Waste to Resource":** the title of this inquiry sets out a challenge as to how we think about waste in strategic terms. The term "waste" carries a negative connotation, whereas "resource" suggests use, renewal and reward:

> "Thoughtful renaming … might contribute a first step towards changing the way local stakeholders think about what they throw away and how it is managed." (Smurfit Kappa)
>
> "The idea of a circular economy, where we use as little resource as possible, generate as little waste as possible, and extract the maximum possible value from resources while they are in use, is not new but is finally becoming mainstream." (WRAP)

- **Waste prevention** must have higher priority: it is the part of the waste hierarchy where Birmingham has made least progress. Many local authorities have their own waste prevention plans – Birmingham needs to have one as part of its new strategy. A "lip-service"/"copy-paste" strategy would be a wasted opportunity as waste prevention presents one of the most creative and potentially entrepreneurial options for shifting behaviour and meeting waste to resource challenges. The incentives are clear: the high costs of waste management are likely to rise, so the most effective way of combating this is to reduce the waste that needs managing;
- **Consider all the waste streams**: this report has already set out the different types of waste generated in the city (Chapter 2) – this new strategy is an opportunity to reconsider municipal waste alongside other types of waste generated in the city, and build on the previous work such as the Total Waste Strategy, where progress has been made but there is scope to go further;
- **Striking a (realistic) balance:** the importance of economics and budgetary realities as a key driving force has already been noted in Chapter 2. This must and will be the overriding factor that will need to be balanced out with other concerns. For example whilst increasing recycling is seen as a good thing and is encouraged by both national and European legislation, serious consideration should be given before setting ourselves very challenging targets. There is certainly scope to catch up with our European counterparts and reach over 50% recycling. However, evidence shows – as things currently stand – that the economic case for this flattens out at around 50-60%.[44]

4.2.5 Setting a new strategy also provides an opportunity to engage Birmingham citizens in the debate around waste and the challenges it presents to every individual, household and neighbourhood – something we return to in Chapter 5.

Findings

1. Establishing a clear guiding principle that sets out what the city wants to achieve from its waste strategy would ensure a coherent and transparent

[44] Evidence from Fleet & Waste Management

approach to any new waste disposal arrangements and provide a mechanism to negotiate the decision-making process.

4.3 The Tyseley Issue

4.3.1 Whatever the focus of the new strategy, it will not start from a blank sheet of paper and the reality is Birmingham cannot, like Greater Manchester, simply re-design the whole waste solution. There is significant waste infrastructure currently in place in Birmingham, and a critical choice for the City Council involves consideration of the future of Tyseley Energy from Waste Plant within the new waste to resource strategy.

4.3.2 Broadly the options relating to Tyseley are:

1. Decommission the existing facility and start afresh;
2. Retain the facility and invest in it further to expand and modernise capacity and streams;
3. Retain the facility and use until end of life: "sweating the asset", balancing capital, operational and maintenance costs with operational benefit.

4.3.3 The pros and cons of the different options for Tyseley were considered:

Keep the existing energy recovery facility as it is			
Strength	• Low capital expenditure • Competitive operational expenditure • Known (no change) • Limited planning risk • No procurement exercise	Opportunity	• Capacity • Availability of Heat
Weakness	• Lower environmental performance compared to some alternatives • Does not facilitate full adoption of the waste hierarchy • Limited scope for growth in associated businesses • Limited flexibility	Threat	• Needs to be filled with waste • Thermal Inefficiency

Expand the existing facility with further capacity			
Strength	• Competitive operational expenditure • Known (no change) • Additional income through import of commercial / industrial or non-Birmingham municipal waste	Opportunity	• Capacity • Availability of Heat • Commercial and Industrial waste business
Weakness	• Lower environmental performance compared to some alternatives • Does not facilitate full adoption of the waste hierarchy • Limited scope for growth in associated businesses • Limited flexibility	Threat	• Requires investment • Needs to be filled • Inefficient

Progressively move away from existing technology in the medium to long term			
Strength	• State of the art facilities • Leading environmental performance • Bespoke to current requirements • Flexible (future proof) • Security of known profit and loss • Scaled to encourage adherence of waste hierarchy	Opportunity	• Support businesses growth • Income • Energy security • Holistic solution for public and private sector • Community buy in
Weakness	• Planning • Possible gap • Uptake if collection regime changes • Capital intensive • Long process (additional costs)	Threat	• Planning • Commissioning

Decommission the existing facility and start afresh with new technology			
Strength	• State of the art facilities • Leading environmental performance • Bespoke to current requirements • Flexible (future proof) • Security of known profit and loss • Scaled to encourage adherence of waste hierarchy	Opportunity	• Support businesses growth • Income • Energy security • Holistic solution for public and private sector • Community buy in
Weakness	• Planning • Possible Service gap • Uptake if collection regime changes • Capital intensive	Threat	• Planning • Commissioning

Decommissioning Tyseley

4.3.4 The option to decommission Tyseley in some ways offers one route to improve Birmingham's performance against the waste hierarchy. New facilities would give the city state of the art facilities, with leading environmental performance and greater flexibility. New partners would be attracted to this "starting over" venture and the city would have perhaps the strongest position to ensure that its priorities were met by an interested market.

4.3.5 Some of the witnesses heard during the inquiry would support the decommissioning of Tyseley. There was concern that the need to "feed" the plant was a barrier to increasing recycling. Birmingham Friends of the Earth (FOE) gave a submission that described the benefits to the city that could be obtained by recovering the value of a much higher proportion of waste, through reuse, recycling and composting, instead of burning it. They:

> "… opposed the building of the incinerator at Tyseley in the 1990s, because we argued it would divert the city from recycling and would mis-use our wastes by treating them as 'fuel'. Birmingham Friends of the Earth sees the 25-year-old waste burning plant at Tyseley as a dying technology without a future, and we

look forward to its closure. If it becomes the City Council's property in 2018, we explain why it would be a liability rather than an asset"

4.3.6 This argument is forceful and logical when looking to a future waste strategy. The notion of simply "feeding" the machine and burning waste is an obvious environmental non-starter when looking to cleaner, greener objectives. FOE also questioned the value and appropriateness of energy from waste, with its contribution to carbon emissions and air pollution.

4.3.7 However, the Committee heard how clean and green-proofing can be part and parcel of energy from waste. In environmental terms, energy from waste is not the same as simple incineration, as electricity is generated from the process of incineration. As such energy from waste falls within the waste hierarchy as "recovery". Energy from Waste is a key part of the Government's waste strategy (see Box 4) below.

4.3.8 In Birmingham, there is the added advantage that Tyseley is within the city boundaries; and its location works in favour of other environmental concerns, such as helping to minimise transportation costs and emissions.

Retaining Tyseley

4.3.9 Options for retaining the Tyseley plant present persuasive economic arguments:

- Avoidance of landfill: it is estimated that, by sending waste to Tyseley, the city avoids Landfill Tax of around £22.4 million per annum at 2012 rates;[45]
- In 2019, the Tyseley EfW Plant will revert to the Council with all capital costs paid off and may have around 15 years of life remaining (subject to a condition survey, not yet carried out). The remaining costs will relate only to operating and maintenance costs net of revenue. In this respect the City Council could choose to sell the resource or capitalise on it;
- Retaining the facility presents the City Council with the flexibility to consider options which maximise the value of generated electricity. Examples of this could include displacing existing energy costs or selling to the grid.

4.3.10 Retaining the Tyseley EFW plant would, at worst, buy time for the City Council to progressively introduce newer technology and/or facilities to readdress the waste hierarchy. And as previously noted, within a fast-changing, technologically and resource uncertain landscape for municipal waste, time would help deliver effective and tailored responses.

4.3.11 Building new facilities is of course expensive, and, noting Government withdrawal of funding for major waste infrastructure (see Chapter 2), the City Council would have to find a commercial partner for projects of any great size. It is also time consuming – finding appropriate sites, planning considerations, local objections, etc. As an example of these constraints, Manchester Waste Disposal Authority (to whom the Committee paid a visit in late 2012), where movement

[45] Evidence to the inquiry from Birmingham City Council's Fleet & Waste Management service

from the business case in 2004 to the introduction of new facilities in 2012/13, took a total of eight years and took from a time of stable economic planning to the most challenging times for local authorities.

4.3.12 As it is just over five years to the end of the Veolia contract, we must be realistic about what can be achieved and when. It should also be noted that the draft BDP states that:

> "Proposals that lead to the loss of such waste management facilities, without adequate provision to replace lost waste handling capacity, will be refused."

4.3.13 Evidence from both waste management officers and Veolia was clear:

> "We continue to believe that the ERF is the most appropriate and best solution for residual waste in Birmingham. The Tyseley ERF operates efficiently and compliantly and has an excellent availability record. It will continue to be available for many years to come as it has been maintained well over its current 16 year life. There are examples of other ERFs where they remain operational for more than 40 years. The Tyseley facility will be fully depreciated after the current contract term and hence costs will drop significantly once this happens."

4.3.14 The evidence from Fleet and Waste Management generally supported that view, with caveats:

> "Under the current contract, it is therefore in the financial interests of the Council to use the EfW capacity to its fullest extent. To date, this has not acted as a constraint to the Council's waste management activities or decisions, but going forward this principle contrasts with the desire to move waste treatment up the waste hierarchy and to deal with waste in other, more sustainable ways."

4.3.15 The Government generally supports EfW, stating:

> "The Government supports efficient energy recovery from residual waste – of materials which cannot be reused or recycled – to deliver environmental benefits, reduce carbon impact and provide economic opportunities. Our aim is to get the most energy out of waste, not to get the most waste into energy recovery."[46]

4.3.16 Box 4 sets out some further detail.

[46] Government Review of Waste Policy 2011

Box 4: Energy From Waste (EfW) – the Government View

DEFRA's *Energy from Waste: A guide to the debate* (Feb 2014) states that EfW can contribute to our renewable energy targets, and help with the move towards a more secure fuel supply.

The Government is keen that the role of EfW is understood and valued by households, businesses and the public sector in the same way as reuse and recycling, and recovers from its historically poor image (largely stemming from the fact that early incinerators simply burned waste to reduce volume). Defra sets out some key statistics:

- Local Authority managed waste going for incineration with energy recovery rose 13% to 5.5 million tonnes in 2012/13 and has more than doubled in the last ten years;
- A 2010 survey found only 2% of commercial and industrial waste was incinerated with energy recovery in England;
- In 2012, 24 energy from waste plants operating in England were treating almost 4 million tonnes of residual MSW and solid recovered fuel (SRF);
- In 2010, the combustion of the biodegradable component of MSW provided 6.2% of the UK's total renewable electricity generation and 4.7% of total combined renewable heat and electricity generation;
- Waste derived renewable electricity from thermal combustion in England is forecast to grow from the current 1.2TWh to between 3.1TWh and 3.6TWh by 2020.

EfW is considered a low carbon energy source, and can be considered a partially renewable energy source (only the energy generated from recently grown materials in the mixture is considered renewable).

The document also addresses concern that energy from waste discourages greater recycling. However, there are examples throughout Europe where energy from waste coexists with high recycling, ultimately delivering low landfill. The risk of competition between EfW and recycling at the more local level is possible, but can be avoided if contracts, plants and processes are flexible enough to adapt to changes in waste arisings and composition.

The importance of energy from waste in the national picture was re-iterated by Climate Change Minister, Greg Barker, at the Energy from Waste 2014 conference: "energy from waste has an important role to play in driving the UK's long-term economic plan".

Source: Energy from Waste: A guide to the debate, February 2013, updated February 2014; Speech by Climate Change Minister, Greg Barker, at the Energy from Waste 2014 conference

4.3.17 The current view of the Executive is that Tyseley will feature strongly in any future strategy. The Green Paper[47] put forward plans to maximise the use of Tyseley by exploring the options for investing further.

4.3.18 As such, there are three options relating directly to the investment and expansion of the Tyseley plant (there are others relating to the site and the district, which we return to in section 4.4). These are:

- Maximise any opportunity to access additional revenue from the spare incinerator capacity that is generated following the rollout of wheeled bins in the city. As recycling rates increase (see Chapter 3) then there will be capacity at Tyseley to take more waste from either commercial premises, other local authorities or other partners;
- Developing additional processing capacity – in other words, installing a third waste stream at the Tyseley EfW facility. An additional third line at the site would process around an additional 175,000 tonnes of waste per year, which again could be sold on. If a third line is developed, the lead time required for this is estimated at between 4-5 years (including planning, construction and commissioning), with an estimated construction cost in excess of £100 million which would need to be funded either by the Council or by the private sector. As such, this consideration needs to be at the top of all future waste to resource planning from now to be accommodated within the five years remaining to the end of the contract;
- "Retro-fit" the plant to a Combined Heat and Power (CHP) plant (see Box 5), generating additional revenues from the export of heat as and when a suitable market develops. Heat from the plant (CHP) could be also used in a district heating scheme (see Box 5) as Tyseley is close to the City Centre with accessible transport routes. This would involve significant investment and has implications for performance of the plant; the work would take around 18 months to complete. Such work requires long term significant power users attached to make the scheme commercially viable. And with the re-development of the TEED together with infrastructural demands around HS2 growth in this city, this could present a real opportunity for the city. In Sheffield for example, there have been benefits from this.

4.3.19 The draft Birmingham Development Plan (BDP) states that proposals to expand existing waste management facilities at the Tyseley Energy Recovery Facility plant in order to accommodate more commercial waste will be supported in principle.

[47] Green Paper: Safe, Clean, Green Neighbourhoods

Box 5: Combined Heat and Power (CHP) and District Energy

CHP generates electricity whilst also capturing usable heat that is produced in this process.

It is most economic when there is a continuous heat demand, such as on industrial sites in continual operation, or through district heating systems in mixed-use community developments, such as offices, retail space and homes.

Many energy from waste plants are built 'CHP ready' but a lack of heat customers, due to location or the relative cost of alternatives, meaning they operate in the less efficient electricity-only mode.

District heating schemes comprise a network of insulated pipes used to deliver heat, in the form of hot water or steam, from the point of generation to an end user.

District heating networks provide the means to transport heat efficiently. They can currently be built up to around 30km from generating plant and distribution networks can be hundreds of kilometres long. This is sufficient to carry heat across our cities, smaller communities and industrial areas. The distance a network can reach is also easily extended by simply adding more providers of heat, or 'heat sources', along the way.

This is of potential huge importance to Birmingham: The total energy consumed a year in Birmingham amounts to £2bn. Currently, there is a retrofitting agenda (Birmingham Energy Savers) but that will still leave a large number of homes in need of retrofitting. There are questions around how much energy can be generated locally, and a need to understand the grid infrastructure, where the heat demand is (e.g. swimming pools) and forthcoming development opportunities eg HS2 and Icknield Port Loop, and new build houses.[48]

Case study: Veolia run a CHP plant in South East London (SELCHP). The plant was built in the early 1990's but due to various political legislation changes the district heat part of the project was shelved, only coming back on the agenda in 2008.

Working in partnership with the London Borough of Southwark a plan was conceived to supply 2,500 Southwark properties on a 5km pipe work system with heat and hot water. The pipe systems and equipment have been installed at SELCHP and are currently finishing being installed on several local estates. The system will be put into full service shortly.

It is expected that this will assist in the council's fight against fuel poverty by making heat cheaper than gas and to provide low carbon heat, as the waste that SELCHP burn is about 60% renewable carbon.. This addition to the current systems already in place will mean that more than 60% of homes in Southwark will be supplied by District heating. In addition, the system is expected to cut 7,700 tonnes of CO2 per year.[49]

[48] http://www.chpa.co.uk/what-is-chp_15.html, on 18th February 2014
[49] http://www.selchp.co.uk/energy-recovery/combined-heat-and-power/, on 18th February 2014

Findings

2. **Tyseley EfW plant is a key part of our waste disposal infrastructure and is not "broken". It is the main contributor to assuring Birmingham's low rates of landfill.**

3. **Retaining the plant will mean low capital costs for a further 15 years and would allow the City Council to progressively introduce newer technology and/or facilities to address the waste hierarchy, at a speed which could be most responsive to technological, environmental and municipal budget imperatives.**

4. **There are options to invest in Tyseley to maximise value. These should be explored fully.**

4.4 The Next Phase of Waste and Recycling in Birmingham

4.4.1 Continued use of Tyseley EfW plant may allow the introduction of more environmentally friendly facilities/technologies over a longer period. The shape and form of these facilities and technologies are as yet unknown; though current technologies can be explored through the journey of waste from production to collection and processing.

Household Recycling Centres (HRCs)

4.4.2 In Chapter 3, this report set out in some detail the kerbside collection rounds operated by the City Council. The role of the five Household Recycling Centre (HRCs) was also mentioned. The current HRC sites are:

- Norris Way in Sutton Coldfield, B75 7BB, which includes a re-use pilot scheme for Birmingham residents (launched in 2012);
- Tameside Drive, Castle Bromwich, B35 7AG;
- Lifford Lane, Kings Norton, B30 3JJ;
- Holford Drive, Perry Barr, B42 2TU;
- James Road, Tyseley, B11 2BA.

4.4.3 They are shown on the map above (Figure 8, page 45), along with recyclate tonnages collected at the kerbside in each ward.

4.4.4 All five HRCs are operated by Veolia, and collect up to twenty different recycling streams. The HRCs are for domestic waste only, and should only be used by Birmingham residents (a postcode check is conducted at the gate). The average throughput is 14,000 tonnes per annum, higher than the UK average throughput on such sites (c 8, 000 tonnes per annum).

4.4.5 They are a critical part of our waste infrastructure. Veolia told us that the HRCs are:

> … are well used facilities which always score highly in terms of customer satisfaction when independently surveyed. The overall HRC recycling rate is over 60%, which is good for large, urban sites and the vast majority of the residual waste avoids landfill by being delivered to the ERF.

4.4.6 However, the sites efficiency was questioned during our evidence gathering. For example, there are often long queues to get into the Lifford Lane depot which suggests that people can be discouraged from taking waste there. Areas to explore include:

- Opening hours (currently 8am to 8pm (Monday to Friday) & 8am to 4.30pm (Saturday and Sunday); open all bank holidays except 25th/26th December);
- Increase in queues following the chargeable green waste collection service (see Figure 10 below for the difference in tonnages between March 2013 and March 2014) – which has an impact on congestion, air quality and road safety (with cars (illegally) mounting the pavement or driving on the wrong side of the road to get around the queues);
- Not accepting waste not brought in a vehicle due to safety reasons.

Figure 10: Tonnage of green waste collected from household kerbside collections and the tonnage collected by Household Recycling Centres in March 2013 and March 2014[50]

Household Recycling Centre (HRC)		Kerbside	
March 2013	March 2014	March 2013	March 2014
340 tonnes	1513 tonnes	1160 tonnes	500 tonnes

4.4.7 The above table does suggest a marked move from kerbside green recycling to use of HRCs, however it should be noted that the lower tonnages reflect the very different weather in March 2013 (snow) and March 2014 (relatively warm).

4.4.8 The reason for considering these in this chapter on "Options" is that these issues need to be addressed and serious consideration needs to be given to the future of HRCs, and how their utility could be developed and maximised. The issue of where HRCs are located and the potential need for more HRC sites was raised during the inquiry. There is an expectation that HRCs will be used more widely as wheelie bins will restrict the amount of waste that can be put out for collection and green waste collections are now a paid-for service. Veolia told us that, because of the high usage at the sites:

> … recycling on large urban sites is generally not as high as smaller rural sites. Therefore if it were possible to increase the number of HRC sites provision

[50] Written Question to the Cabinet Member For A Green, Safe And Smart City From Councillor Barbara Jackson, 8th April 2014

within Birmingham, this would lead to both participation, as householders would have less distance to travel, and increase in recycling rates at these sites.

4.4.9 Their number and positioning needs to be considered to secure the most efficient disposal options in a changing municipal waste service.

4.4.10 Since then the issue has become more acute: under the current plans for High Speed 2 (the new high speed rail line to be built between London and Birmingham, and then onto Manchester and Leeds), the line will run straight through the Castle Bromwich HRC (which is also a waste transfer site and houses the Bottom Ash Plant – see Chapter 3). The HRC will therefore need to close (construction is due to start in 2016, though this has been challenged by the City Council[51]) and be relocated, which will act as a catalyst for a review of HRC provision across the city. It was disappointing to note (as members of the Birmingham Economy & Jobs O&S Committee did in January 2014) that the draft Birmingham Development Plan did not mention new HRCs at all – this is a missed opportunity, especially as new housing requirements for the city have to factor in accessibility to waste disposal.

Sorting Waste and Recycling After Collection

4.4.11 In Birmingham, recyclate is collected separately from residual waste, so that some of the sorting is done by the householder. Where different recycling streams are collected together (as glass, cans and plastics are in Birmingham) then they are transported to a 'clean' Materials Recovery Facility (MRF – see Box 6 below) that sorts these materials ready to transport for processing.

4.4.12 Veolia currently transports these materials to the Four Ashes Materials Recovery Facility (MRF) near Wolverhampton. This can process up to 40,000 tonnes per year. As Veolia owns this plant, Birmingham's access to this MRF will cease in 2019 unless new arrangements are made (unlike Tyseley EfW which will revert to City Council ownership).

4.4.13 Those new arrangements could be to continue to send materials to a MRF owned by a third party (whether Veolia or another waste contractor) or to consider a new facility in Birmingham. There could be solutions in neighbouring authorities which facilitate this. The draft BDP would facilitate the building of a MRF in Birmingham through the planning process. However, there is still cost, location and timing to consider.

4.4.14 There is a further consideration when looking at MRFs and which type to use. Most MRFs currently separate dry recyclables – glass, cans, plastic and sometimes card and paper. However, in some other MRFs, residual waste can be sorted to extract recyclable material. In Birmingham, anything put into the residual waste stream is sent to Tyseley or landfill and there is general recognition that a lot of recyclable material does go in the residual waste stream. As such, the use of a "dirty" MRF (as they are known) would present an opportunity to extract more of the valuable recycling

[51] Birmingham City Council response to HS2 Consultation on the Formal Environmental Statement, Cabinet, 17th February 2014

material and help increase recycling rates further. A recent article in Resource magazine[52] noted that Calderdale MBC made the biggest improvement in recycling rates of unitary and disposal authorities (in England, Wales and NI) in 2012/13, "mainly due to retrieving a significant amount of recyclable material from the residual waste stream at the Associated Waste Management MRF – on average, this site recycles approximately 36% of Calderdale's black bag waste."

4.4.15 It should be noted that this would not be a straightforward gain however, since quality may be compromised which would in turn affect the potential income generated.

4.4.16 An alternative to a "dirty" MRF is Mechanical Biological Treatment (MBT). This takes biodegradable residual waste and treats it via Anaerobic Digestion (AD) or composting (see next section). Manchester Waste Disposal Authority have built an MBT which takes residual waste, sorts it (removing metals) and separates it into fuel for the Combined Heat and Power Plant, fuel for the AD plant, and powers the only chlorine plant in the UK (through a long term deal).

Box 6: Materials Recovery Facility (MRF)

MRFs take a range of materials from kerbside collections or recycling centres. The materials are separated into their individual material streams, bailed and sent on for reprocessing / prepared for sale in the commodity markets. Mostly this separation and preparation is done by machine though some (mainly older facilities) employ people to hand sort some waste.

Clean MRFs handle commingled or pre-separated recyclables from kerbside collections or household recycling centres.

Dirty MRFs process recyclables from a stream of raw solid waste.

Mechanical Biological Treatment (MBT)

MBT technologies are pre-treatment technologies which contribute to the diversion of municipal solid waste from landfill when operated as part of a wider integrated approach involving additional treatment stages.

MBT plant can incorporate a number of different processes in a variety of combinations including Materials Recovery Facilities (MRFs), composting or Anaerobic Digestion.

Recycling Processes

4.4.17 Under the current waste contract in Birmingham, Veolia transports collected plastic, cans and glass recyclates to the MRF near Wolverhampton, from where it is sorted and sold. The City Council has no involvement in this process and there is little information given to citizens, either on the website or elsewhere about the final destination of recycling (we return to this in Chapter 5). As such, there is considerable opportunity for building awareness of entrepreneurial opportunities and markets which could be developed.

[52] Resource magazine, Spring 2014, Number 76

4.4.18 Most recycling is sold onto processing companies and larger companies have an advantage here in being able to absorb fluctuations in the market as they are able to trade with stable and large volumes. Local authorities tend not to have a direct input into these industries. The most common exception is for biodegradable waste.

4.4.19 Under Birmingham's current system of waste collection, food waste is not collected separately. This is the most obvious additional waste stream to consider in terms of driving recycling as it comprises the largest remaining recyclable element of residual waste in Birmingham. It is also especially unsuitable for landfill and incineration as it is generally wet, smelly and produces methane. Whilst many local authorities have begun to introduce recycling of food waste, either on its own or amongst garden waste, around 50% have not.[53]

4.4.20 The separate collection and processing of food waste for Birmingham was considered in 2009, when WRAP produced a report 'Food Waste Collection Guidance'. This concluded from a number of trials that the amount of food waste collected per household provided with a separate food waste service could be expected to be between 1kg and 2.2kg per week.

> In the Birmingham context, at the top end of this expectation, this would translate into an increase of (360,000 households x 2.2kg x 52 weeks) = 41,184 tonnes of food waste per year. Against total domestic waste arisings of 420,000 tonnes (2011/12) this would represent an increase in recycling of around 9.8% per annum.

4.4.21 The WRAP report also notes that

> In general, yields will tend to be higher in more affluent areas. Again, in the Birmingham context, with large areas of deprivation and an ongoing commitment to a weekly refuse collection, it is estimated that the potential increase in recycling would be at the lower end of the expected increase, at around 4.5% – 6.5%.[54]

4.4.22 Following this, a Food Waste Working Group was established to review the following areas in relation to food waste collection:

- To review the viability for having a food waste collection;
- Identify associated costs – collection, disposal, fleet, containers, storage etc;
- Practical implications of service;
- Contractual implications of service.

[53] 2011 Waste Review
[54] Written Question To The Cabinet Member For A Green, Safe And Smart City From Councillor Jerry Evans, 16 October 2012

4.4.23 In summary, there are two options which would be open to the Council in order to collect food waste: either collection of food waste alongside green waste or a separate collection of food waste. Both options were considered and costed in 2012 (before the introduction of wheelie bins and charging for green waste[55]) and the results are set out in Figure 11.

4.4.24 The costs are significant, and as the City Council takes a minimal amount of waste to landfill then the cost savings associated with food waste collection are limited in comparison with other local authorities. The impact of separate collection should also be taken into account: the quantity of arisings may decrease as people realise how much they are wasting.

Figure 11: Options and Costings for Food Waste Collection[56]

	Option 1: Green and food waste combined	Option 2: Food waste
Tonnages	Food waste = 41,270 Green Waste = 40,000 Total = 81,270	Food waste = 41,270
Estimated recycling increase	10%	10%
Overall cost of service*	£11,824,722	£10,413,421
Cost avoidance	£3,741.200	£2,304,00
Net cost of service	£8,083,522	£8,109,421

* includes new vehicles, caddies and caddy liners

4.4.25 However, if such a move were to be considered, then there is an opportunity to develop an anaerobic digestion facility at Tyseley to generate electricity from food waste. The feedstock could be separately collected food waste from households and commercial and industrial customers in Birmingham and, potentially, from neighbouring authorities. The draft BDP would support the separating of food waste, as it seeks to encourage the "management of food waste through existing and emerging waste management technologies and ensure that commercial and non-commercial biodegradable food wastes are treated as a resource" through the planning system.

4.4.26 The main options for treating biological waste are set out in Box 7 below. However, there are other technologies being developed, such as those being developed by Aston University's European Bioenergy Research Institute (EBRI), which offer potential opportunities for diversification (see Box 8, page 65).

[55] Which means that not everybody gets a green collection now – this would restrict use of this option in the future
[56] Evidence provided to Transport, Connectivity & Sustainability O&S Committee; Reducing and Recycling Business Waste, Tracking Report, amended Appendix 1; 01 March 2013

Box 7: Biological Treatments

Anaerobic Digestion (AD) is a natural process where plant and animal materials (biomass) are broken down by micro-organisms in the absence of air. The AD process begins when biomass is put inside a sealed tank or digester. Naturally occurring micro-organisms digest the biomass, which releases a methane-rich gas (biogas), and leaves behind a material is called digestate.

Biogas – a mixture of 60% methane, 40% carbon dioxide and traces of other contaminant gases – can be combusted to provide heat, electricity or both; or 'upgraded' to pure methane, often called biomethane, by removing other gases. This can then be injected into the mains gas grid or used as a road fuel. Digestate is rich in nutrients, so it can be used as a fertiliser and soil conditioner. It contains valuable plant nutrients like nitrogen and potassium. It can be used as a fertiliser.

The typical lifespan of AD facilities is 15 to 30 years.

The Waste Management Plan states that:

> "The Government supports anaerobic digestion (AD) because of its value in dealing with organic waste and avoiding, by more efficient capture and treatment, the greenhouse gas emissions associated with its disposal to landfill. AD also recovers energy and produces valuable bio-fertilisers. The Government is committed to increasing the energy from waste produced through AD."

To support an increase in the use of AD, the Government has produced Anaerobic Digestion Strategy and Action Plan 2011. This includes actions aimed at improving the dissemination of information and other actions related to developing best practice, providing an agreed framework for skills and training, and further work to deal with specific technical or regulatory barriers. Delivery and implementation of the Action Plan is monitored and reported by Defra.[57]

In-Vessel Composting (IVC) recycles mixed organic garden and food waste into a compost product, which is then used in horticulture and agriculture as a soil improver. The composting takes place in an enclosed environment, with accurate temperature control and monitoring. IVC treatment depends on whether meat is included or excluded.

Open air windrow composting is used for processing garden waste, such as grass cuttings, pruning and leaves in either an open air environment or within large covered areas where the material can break down in the presence of oxygen. It cannot be used to process organic materials which include catering and animal wastes as these have to be processed via (IVC) or (AD) due to their Animal By-Products Regulations (ABPR) categorisation.

[57] http://www.biogas-info.co.uk/index.php/ad-strategy-a-action-plan.html

Box 8: European Bioenergy Research Institute (EBRI), Aston University

The EBRI industry scale demonstrator facilities on the Aston University campus provide an example of the possibilities offered by technological advance. These technologies produce electrical power and heat from waste and residues while also offering a carbon capture solution. The energy production process achieves high efficiency levels while generating very low emissions.

EBRI is being funded by the European Regional Development Fund (ERDF) to develop a new centre of excellent in bioenergy technologies and a focal point for supporting regional business with technology transfer and growth opportunities. It is a £16.5m project to create new dedicated industrial research facilities and a unique industrial scale power generation plant on the Aston University campus. These new facilities will demonstrate the practical nature of the EBRI technology by supplying power and heat for use on the campus.[58]

Recovery Options

4.4.27 Birmingham's recovery options largely focus on Tyseley. However, in January 2014 the Department for Energy and Climate Change published the Community Energy Strategy, setting out how the Government will meet its commitment to encourage community-owned renewable energy schemes, set out in the Coalition Agreement.

4.4.28 It recognises that individuals and local communities can make an important contribution to maintaining energy security, tackling climate change and keeping costs down for consumers; and that putting communities in control of the energy they use can have wider benefits such as building stronger communities, creating local jobs, improving health and supporting local economic growth. The Strategy cites the example of the Balsall Heath neighbourhood plan, which has a goal "to improve the availability of renewable energy and sustainable waste management facilities".

4.4.29 These open up the options for smaller, local energy generation schemes, including those that involve waste. There are also opportunities developing in terms of community-scale anaerobic digester (AD) plants, which, evidence shows, can combine the nutrient recycling benefits of smaller on-farm AD units with the optimised design, engineering and management standards of larger scale AD units.

Findings

5. Serious consideration needs to be given to review the numbers and locations of HRC sites. A neighbourhood and district responsive position needs to be produced ahead of 2019. The context for this is the evolving devolution of waste management functions to districts, as well as the depot roll out of wheelie bin collections.

[58] http://www1.aston.ac.uk/eas/research/groups/ebri/projects/rural-india/pyroformer/

6. **There are many options for more environmentally advantageous ways of dealing with our waste. Recycling and disposal technologies are fast evolving and we cannot predict where these technologies will be in the next 5, 10, 20 years. The city needs to maximise the use of new technologies – but also be aware of how quickly these change, especially in order to protect the capital challenges this would involve.**

4.5 Contractual Options

4.5.1 There has been an assumption amongst some during our evidence gathering that another long-term contract, outsourcing our waste disposal in a similar (but improved) arrangement to the current position, will be an inevitability, because it may be the only option feasible within the budget challenges faced by the City Council. Whilst this may be likely, the role of this inquiry is to have challenged assumptions and presented the different options, then to look at which would be suitable and which not.

4.5.2 In this section, we look at those options:

1. Procure another single long-term contract for all aspects of waste disposal;
2. Keep all waste operations in-house;
3. Parcelling up the components of the current contract into smaller, shorter, contracts:
   - Residual waste management
   - Household Recycling Centres (HRC) operation
   - Waste Transfer Station (WTS) operation
   - Composting
   - Street sweepings disposal
   - Recycling
   - Other miscellaneous and minor services.
4. Joint contracting or service level agreements with neighbouring local authorities.

What We Have Learned

4.5.3 The Committee explored the pros and cons of the current waste contract. In doing so, three key principles were identified for future contracts: flexibility, scale and timing.

4.5.4 The main flaw in the current contract was the inflexibility of the contract (which meant that any changes to driving recycling had to be negotiated with the contractor – something which is at odds with the City Council's role to respond to statutory guidance). The current waste contract for the city pre-dates modern recycling collection methodologies and the current emphasis on the waste

hierarchy, although changes have been made throughout the period of the contract. As evidence from Fleet and Waste Management noted:

> "The 1994 waste contract was originally primarily designed to be a contract for the treatment and disposal of residual waste, and did not contemplate the changes which have happened in waste collection arrangements in the intervening period. It also grants VESB exclusivity over the waste stream. These parameters have constrained the Council's flexibility to respond to evolving circumstances although VESB has continued to support the Council's agenda through recycling/composting of source segregated waste as appropriate."

4.5.5 Evidence from Legal Services explained that the 1993 waste disposal contract has a limited change clause (the Council's current medium and long term service delivery contracts usually contain more detailed change clauses relating to scope of services, methods of delivery and valuation rules) and limited provisions dealing with a Change in Law (the Council would now use a more detailed industry standard Change in Law mechanism).

4.5.6 This flexibility is key, and is linked to the other concepts – scale and timing. Some witnesses argued that flexibility is best achieved by looking at smaller scale facilities, perhaps linked to district energy schemes. By moving the entire waste management process "down in scale", a more locally based and flexible system of waste processing can be achieved:

> "The conventional arrangement for large scale waste treatment at centralised facilities requires large scale capital investment to be secured; such investment requires for service providers to offer long term contracts with guarantees or lock-in terms for the provision of waste from the council to the treatment facility." (Aston University)

4.5.7 This, and the fact that smaller scale would also mean more local, would also reduce the distance waste would need to travel before being processed. This has prompted a number of commentators, including the LGA in their recent report *Wealth from Waste* to opt for smaller scale infrastructure:

> "However, we believe that the focus on supporting local and smaller scale waste reprocessing, recycling and reuse infrastructure could be tasked to local authorities through the establishment of local waste and recycling boards dedicated to providing finance to developers to help lever out private sector investment in this developing market. These Boards could be capitalised through European Regional Development Funds, Local Enterprise Partnerships or landfill tax receipts."

4.5.8 Moving to smaller scale operations could assist an approach to progressively move away from existing technology in the medium to long term – building up new (perhaps smaller) facilities with the opportunities therein to stimulate local enterprise opportunities too.

4.5.9 However, whilst, the reduction of scale option has its advantages, it is critical to recognise that waste infrastructure has a long lifetime and any arrangement will need to adapt to potential long term change and assist to drive waste up the hierarchy, not constrain it.

> "There is a growing body of compelling evidence which indicates that realising the full value of materials through resource management in what is now widely being called a circular economy can help achieve sustainable growth…whilst the theory is sound there are significant barriers to delivering in practice." (WRAP)

4.5.10 The other dimension is time – it will take time to design and build some of these options. Birmingham will have Tyseley for around 20 more years – this time could be used to change (and pay for) methodologies more gradually. Using the time that Tyseley buys (ensuring that our landfill remains low), as we better understand the information coming from the wheelie bin roll-out, as technologies develop, this evidence base can be built and change integrated on an on-going basis. This approach would also enable the city to take advantage of changing economic viability. Veolia warned that:

> "There are many examples of so called advanced treatment technologies whose claims have been proven to be misplaced and not commercially or technically viable."

Strengths, Weaknesses, Opportunities and Threats

A long term contract for all waste disposal			
Strength	• Provides degree of certainty to commercial partners which would be reflected in costs • Transfers risk of operating the infrastructure, • Experienced and qualified private sector companies are better placed to absorb and manage fluctuations in the recyclate market, and have the expertise to operate complex plants and maximise performance	*Opportunity*	• Build in change mechanisms, rather than commercial negotiation, and require that parties must work together to achieve the best outcome • Build in different commercial options with performance incentives to drive the right outcomes • Could have a "cradle to grave" contract incorporating waste collection and disposal
Weakness	• Transfers control of a vital and prominent public service to a third party • Constrains the ability to vary the contract – any change will come at a cost • Likely to be large scale infrastructure, potentially reducing the likelihood of local facilities	*Threat*	• Any inflexibility in the contract would inhibit the council's ability to respond to the pace of financial, social, environmental, technological change • Building in change mechanisms, rather than commercial negotiation, will come at a price • Cost savings may be dependent on maintaining the volumes of waste – reducing flexibility • Proximity principle may be threatened if the commercial partner has facilities elsewhere in the country

Keeping it "in-house"[59]			
Strength	• Variation and flexibility without contractual penalties • Any profits (and losses) would be retained by the Council • Council would have full control over operation	*Opportunity*	• Options include setting up a wholly owned company or engaging a management company to run major facilities such as Tyseley • Increases opportunities to involve local businesses, communities and the third sector – keep value in the local area • Access to funding not available to the private sector (e.g. prudential borrowing) which could be cheaper • Could include smaller, locally based infrastructure
Weakness	• Size and scale of the operation would be a major addition to the City Council's responsibilities • Funding would have to be found for any new facilities/investment/repairs • Lack of expertise: in running an EfW Plant within the City Council and in trading on the international commodities markets or electricity markets • Additional workloads, closures etc would have to be managed and financed in-house	*Threat*	• Potential lack of links with the industry to keep up with pace of technical development which is extremely rapid in this field • Variations in recyclates and residual waste streams will have to be managed • Fluctuations in the recyclate market would threaten operations and income • No transfer of risk • Need to find processing and treatment facilities e.g. a MRF and recycling processing / ways to sell on

[59] At the time of the contract there was a requirement for local authorities to contract out their waste disposal function (contained in Section 32 and Schedule 2 Environmental Protection Act 1990). The requirement to outsource was repealed by Section 47 Clean Neighbourhoods and Environment Act 2005. The City Council could therefore run its own waste disposal operation

Multiple/ Shorter Contracts			
Strength	• Need not mean a stark choice between "contract out all waste disposal" or "keep it all in-house" • Maximises flexibility • Spreads risk with a number of commercial or third sector partners for different elements of the waste process	*Opportunity*	• Operating contracts could be shorter than the infrastructure life to keep competitive tension with the operator[60] • Increases opportunities to involve local businesses, communities and the third sector – keep value in the local area • Third sector will be able to access funding streams that local authorities cannot • Could stimulate competition between service providers during the term of their contract, allowing companies to seek constant iterative or marginal improvements as well as the step-change improvements encouraged at contract renewal time • Could incentivise the deployment of new technologies and greater efficiency
Weakness	• Increases in the Council's cost of contract administration associated with the management (and periodic re-procurement) of several contracts • No transfer of risk / or on a smaller scale • Limited opportunity for capital investment	*Threat*	• Without a strong contract management function within the Council, the risk of non-compliance could increase • Likely to be more expensive

[60] For example Amey told us that they have a contract for the design and build of a facility with a 25-30 year life in Milton Keynes but only a 15 year operating contract. Performance related extensions will encourage the operator to remain focused throughout the contract life.

Jointly procuring with other Local Authorities			
Strength	• Sharing of risk and responsibility/contract management • Economies of scale to be had in joining together to procure services or build facilities (though Birmingham is large to begin with so this would be limited) – see example below (Box 9)	*Opportunity*	• Access to funding not available to the private sector (e.g. prudential borrowing) which could be cheaper • Increases the sources of waste from a range of locations/organisations to ensure capacity is used effectively and efficiently, and maintains local flexibility to increase recycling without resulting in local overcapacity
Weakness	• Timescales of other LAs current contracts • Need of other LA's – many have their own facilities / arrangements	*Threat*	• Failure by partner Local Authorities to adhere to contractual provisions • Partnering with other local authorities would mean a large scale contract that would limit number of potential business partners

Findings

7. Concepts of flexibility, scale and time are key to future waste to resource strategy and must inform the cost benefit rationale of any proposal.

8. Where changes are needed in response to financial, social or environmental imperatives, these should not be precluded or made difficult by the contract.

9. The future strategy should also be capable of making links with other agendas – such as energy generation, energy saving targets, housing plans or other waste collected in the city.

Box 9: Case Study: Improving the efficiency of waste management services across the Kent Waste Partnership (KWP) comprises 12 districts and the County Council. Together, they have embarked on a programme up to 2020 to avoid costs of some £100 million on service operations. This started in 2010 with joint contracting for collection, disposal and streetscene services by Dover and Shepway District Councils, and Kent County Council. Over time the other councils in the areas have been harmonising services under the framework set by KWP. Thus far, £7.5 million of avoided costs have been achieved since the contract was awarded in 2010 with further benefits yet to be accrued over the lifetime of the project.

5 The Next Steps

5.1 Overview

5.1.1 Having considered the key decisions facing the City Council in renewing its waste strategy, this chapter sets out some of the steps needed to be taken to help make those decisions most effectively.

5.1.2 In summary these relate to three areas:

- Involving the citizens of Birmingham;
- Understanding the waste needs of our city;
- Maximising value for Birmingham.

5.2 Involving the Citizens of Birmingham

5.2.1 The first step must be to involve the Birmingham citizens in the debates and decisions that will follow. As the recent Districts and Public Engagement O&S Committee's report on Citizen Engagement noted:

> "The social contract between the citizen and the Council is changing and engagement has a key role to play in defining this relationship"

5.2.2 A recent select committee report[61] states that the advantages of engagement in policy making includes:

> "Improving the quality of policy, by ensuring as broad a range of knowledge, views and values as possible are present in the process and ensuring that policy goes with the grain of public values."

5.2.3 In thinking about this engagement with regards to waste, the involvement will need to include both citizen feedback from the customer perspective, as those who receive a service from the City Council; and citizen engagement from the stakeholder perspective, as those who contribute to, participate in and benefit from a refreshed efficient and effective waste strategy and operation.

Developing a New Strategy

5.2.4 Setting a new strategy is an opportunity to engage residents in the debate around waste disposal in Birmingham. Waste is the most recognised and universal service the City Council provides, and whilst some decisions will need to prioritise efficiency and effectiveness, there are clear

[61] Public Administration Select Committee (2013) *Public Engagement in Policy Making*

advantages in engaging residents at an early stage. The householders in Birmingham will have to be involved from the outset in designing waste to resource strategies as they will also be partly responsible for its operation.

5.2.5 As evidence from Smurfit Kappa put it:

> "It may be possible to design a strategy without public input, but without its backing it's probably doomed to failure. A city of Birmingham's size has a wealth of talent available and well publicised public consultation would allow some of that talent to come to the fore with suggestions, constructive criticism and ideas."

5.2.6 Manchester told us that they undertook early public consultation to understand needs and aspirations, and to gain "buy in" for the final strategy. This is important as any successful waste strategy will maximise resident participation in and compliance with recycling collection schemes, to maintain the quality and so commercial viability of recyclate collected.

5.2.7 The key however is to engender behaviour change. As the Green Paper notes:

> "Waste disposal is a major cost to the city council and whilst new disposal and recycling technologies and new contractual arrangements can reduce costs, the behaviour of local residents will have the single biggest impact."

5.2.8 There was a view from witnesses to the inquiry that where people feel excluded, or do not understand or feel any responsibility for what happens to waste, they feel disempowered.[62] Capturing and responding to this when designing a strategy could be one of the most important and cost-neutral solutions to the waste to resource challenge.

5.2.9 It is also important to ensure all sections of Birmingham's community are engaged. Chapter 3 shows the differential rates in recycling across the different wards of the city – this may demand more targeted engagement and communication to change behaviour, especially as collection services change (e.g. with the introduction of charges for green waste).

5.2.10 Broadly speaking, behaviour change in terms of increasing recycling is achieved through three broad approaches:

- Easy to use and understand collection methods along with appropriate containers correctly sized for the materials required;
- Clear, regular and effective communication;
- Incentives offered to householders sufficient to influence behaviour; assisting in moving from "penalisation" and associations with waste as "bad"/"dirty" to acceptance of it as a resource.

5.2.11 The next three sections consider each of these in more detail.

[62] Evidence submitted to Friends of the Earth

Collection Methods

5.2.12 The collection methods used in Birmingham (Chapter 3) were not the focus of this inquiry. However it is worth emphasising here the importance of reliability and responsiveness in waste collection services and how that can impact on participation rates. Surveys conducted as part of the wheelie bin consultation showed that over 50% of respondents reported that they recycled as much as they possibly could, with a further 25% recycling a lot but not everything. Their reasons for not recycling included:

- Boxes fill up too quickly (38%)
- Nowhere to store boxes (31%)
- Too much trouble/not enough time (21%)
- Don't know what to do (11%).[63]

5.2.13 Previous satisfaction surveys have shown satisfaction levels with Birmingham waste collection services and the household recycling centres to be generally high – over 80%. Satisfaction with the fortnightly recycling service is slightly lower at 79%.[64] Of course, these figures are based on the old – pre-wheelie bin – service, and are focused on household collections.

5.2.14 These high rates need to be maintained and improved upon. Work has been conducted by the Governance, Resources and Customer Services O&S Committee, examining all elements of customer service from first contact through to delivery of the service or resolution of the problem with the aim of ensuring maximum improvement in customer services and end-to end service delivery. That Committee reported on its work in April 2014, and highlighted the need for a more customer focused approach, particularly in ensuring the responsiveness of the service when things go wrong (e.g. when a collection is missed). This is critical in maintaining high participation rates.

Communication and Information

5.2.15 The Governance, Resources and Customer Services O&S Committee also heard that the Birmingham Promise is being developed with the intention to develop a set of service standards that would both improve the quality of response our customers receive and drive service improvement. This links directly to the issue of communication and information in relation to driving change in behaviour.

5.2.16 In order to encourage participation and to maintain quality, there is a need to give clear guidance on the service (frequency, rules, special requests, what can and cannot be recycled and how waste is processed and disposed of). WRAP highlighted national evidence[65] that half of householders hold back waste material because they are not sure whether it can be recycled or

[63] Wheelie Bin Business Case, report to Cabinet, 16th September 2013
[64] Birmingham Residents Tracker Survey Summary overview Quarter 4 2012/13, BMG Research
[65] See Ward, P (2010) http://www.mrw.co.uk/home/how-councils-can-meet-recycling-expectations/8607606.article

not. Equally a third of householders put material out for recycling even if they are not sure if it can be recycled because they think it should be. Both of these results have consequences for local authority performance in: achieving recycling targets; increasing costs for landfill or recycling and ensuring continuing citizen support for services.

5.2.17 It also links to the quality of recyclates, which is critical as this drives the commercial opportunities which will subsidize the costs of collecting materials and so greater focus is required to constantly remind householders what to put in their containers and what to leave out.

5.2.18 The City Council's own consultation exercise around the introduction of wheelie bins emphasised the need to give residents clear information about: the benefits of wheelie bins (that they typically help improve recycling rates for example); the 'rules' (such as what goes where, collection days, side waste and closed lid policies and the arson risk from bins being left out too long); how to prevent contamination, and their options with respect to, for example, assisted collections.[66]

5.2.19 WRAP's market research suggests that satisfaction with local authority communications concerning waste and recycling is lower than many other aspects of collection services. For example, only 54% of respondents (nationally) were satisfied with council communications about the reasoning behind the rules of their collection service.[67]

5.2.20 Their response was to join with the Local Government Association (LGA) to develop a Waste Collection Commitment. The Commitment is based on research on residents' views about what they like and dislike about their existing services and in consultation with local authorities, the Household Waste Collection Commitment sets out in plain English the principles which should underlie domestic waste and recycling collection services.

5.2.21 The Inquiry was not presented with any research assessing customer views of waste and recycling communication and information in Birmingham, however there are opportunities with the wheelie bin roll-out and the involvement of Ward and District Committees.

5.2.22 The Committee was able to compare Birmingham's offering with that of other local authorities and found it wanting. Birmingham does have a Waste Communications Plan, and there is some information available on the City Council's website. However there must be acceptance that to be effective the plan must constantly evolve. There is little information about the destination of waste from Birmingham. We need to provide more information on this. As WRAP notes:

> "Stories in the media about materials put out for recycling being shipped to the far east, sent to landfill, or incinerated have fed scepticism about what happens to materials that are collected for recycling. Such sentiments emerged regularly in the focus groups and are closely linked to the pledge to explain how materials are used after collection. That part of the principle is also partly linked to

[66] Wheelie Bin Business Case, report to Cabinet, 16th September 2013
[67] http://www.wrap.org.uk/content/household-waste-collection-commitment-0

concerns about crews' treatment of recycled materials, particularly when residents have been asked to separate these before leaving them out for collection. Almost a third of respondents (31%) agreed with the statement, 'It's pointless separating out different types of recycling because the council puts them all in one lorry anyway'."

5.2.23 Many local authorities provide much more information about recycling than is the case in Birmingham – in terms of where it goes and how it is processed. Bristol City Council – the highest performing core city for recycling – had the following diagram on their website (now removed but with a more detailed leaflet on where each waste stream goes), allowing householders to know and own the journey of their waste. This compares to the sparse information on the Birmingham City Council website.

5.2.24 Good communication is vital: Manchester told us that not all councils within Greater Manchester do a lot of education/communication/promotion and this is reflected in the relative recycling rates. Another good practice example is set out in Box 10 below.

Box 10: Case study: South Oxfordshire and Vale of White Horse District Councils procured a joint waste contract using a single collection methodology with an increasing the number of materials collected including food waste, coupled with the use of technology on waste vehicles to optimise routes. This led to a saving of £1.2 million per annum and avoided £6 million in landfill tax. The councils are now the top recyclers in the country at 68 per cent thanks to an efficient service backed up by an award winning communications campaign. All this was achieved while demonstrating resident satisfaction levels of between 91 and 96%.

5.2.25 In recent years Veolia has opened an Education and Partnership Centre at Tyseley – classroom space available to all Birmingham residents and community groups for educational and training purposes. The opportunity given by Veolia for school visits is welcomed but should be joined up with the City Council to ensure a waste visit for each year group in every school.

Incentives

5.2.26 Incentive schemes are used in some parts of the country to counteract the perception that efforts to recycle have no direct impact on the householder. Windsor and Maidenhead Council, for example, has increased recycling levels by 35% as a direct result of rewarding residents when they recycle their rubbish.

5.2.27 In January 2014, Serco commissioned a report into the Impact of Recycling Incentive Schemes.[68] The report notes that there are two types of financial incentive:

1. Rewards or payments made to encourage people to recycle more (or dispose of less), including rewards on an individual level (e.g. vouchers for local or, rewards returned to the whole community in return for the aggregate recycling performance of the residents within that community
2. Charges for the disposal of residual waste based on either the volume, weight or collection frequency of the waste so that those who dispose of less waste pay smaller charges- sometimes called Pay As You Throw schemes (these are not used in the UK at present[69]).

5.2.28 The key findings across the incentive schemes studied, were that:

- Based on a small sample it appears that the impact on residual waste arisings is varied and the data picture becomes much less clear when compared to benchmark authorities without incentive schemes. However:
  - Authorities with recycling incentive schemes recorded an average 8% increase in recycling performance;
  - This was accompanied by an average 3% reduction in landfill;
  - There was wide variability in the performance of different schemes: 40% of schemes showed both increased recycling and reduced landfill;
- 25% of residents say that recycling incentives would encourage them to recycle more with 75% suggest they are already recycling as much as they can.

[68] Eunomia Research & Consulting, commissioned by Serco, Investigating the Impact of Recycling Incentive Schemes, January 2014. The review was undertaken using the most up-to-date evidence available. Whilst it was not possible to compile a comprehensive dataset for each scheme, elements of the evaluation framework were completed for each of the schemes within scope of this research.

[69] Local authorities are not permitted to charge for residual waste collection, though some charges are permitted (eg collection of green waste) under Controlled Waste Regulations 2012 – see Chapter 3.

- There was little difference in the overall preference between personal and communal incentive schemes with personal incentives being consistently marginally favoured as the preferred option;
- Comprehensive marketing communications were noted across all of the schemes looked at regardless of scheme effectiveness;
- Cost effectiveness was considered: the cost of the different incentive schemes was banded to three cost bands low, medium and high in accordance with the scheme costs of operation per participating household. The study showed that for medium cost schemes, costing £1.00-£2.00 per participating household, the cost of introducing such schemes come closest to being justified and recouped in diversion savings and recycling income. For high cost schemes, costing >£2.00 per participating household the investment in incentives schemes is unlikely to be recouped in diversion schemes and recycling income;
- There is no data to demonstrate the long-term impacts of incentive schemes;
- Research conducted on Pay As You Throw schemes point to an impressive increase in recycling rates, as well as overall waste prevention. Research suggests that weight and frequency-based schemes are the most effective.

5.2.29 Incentive schemes have been trialled in Birmingham recently:

> "Veolia's view is that this has not had a significant impact on the additional tonnage of recyclate collected as rewards were not significant enough to modify behaviours. However such schemes should be considered as part of the suite of changes to increase recycling in the City."

5.2.30 In the surveys carried out as part of the wheelie bin consultation, there was strong support for a Recycling Reward Scheme, providing it is fair and benefits local companies and causes. There was also a sense that it will encourage recycling insofar as if people are going to get something back, then they might be more inclined to do it. However, not all those who responded to the wheelie bin consultation thought it a good idea. Some favoured the 'stick' over the 'carrot', and more enforcement on people that don't rather than rewarding people that do. Others commented that 'where is the incentive if people recycling different levels of waste are receiving the same reward?'[70]

5.2.31 There is also scope to consider other incentives:

> "Another innovative approach to incentivising recycling that is being trialled is the offer of a "community reward". For example, the Gloucestershire Waste Partnership invited five communities to vote for local causes that would receive cash rewards if recycling rates in their areas went up. Residents have nominated

[70] Wheelie Bin Business Case, report to Cabinet, 16th September 2013

projects such as a community resource centre, youth services and a local football club. The results of this pilot are not yet available, but the design points to another potential way for local people to see a tangible benefit for their efforts."[71]

5.2.32 As part of the Weekly Collection Support Scheme (under which Birmingham received £29.785m over three years in order to co-fund the wheelie bin roll-out), the City Council undertook to introduce a Recycling Incentive Scheme. Details of that scheme are not yet available.

Findings

10. A people-centred engagement exercise, built on where behaviours and requirements are now and how far things can be changed, is needed to underpin the principles in the new strategy (as set out in Chapter 4), to involve the citizens of Birmingham in one of the local issues that concerns everyone.

11. Good customer services, education/information and communication are all important in driving up recycling rates.

12. Waste-specific communications are not being approached strategically in Birmingham. As a result, communication with residents about waste prevention, re-use and recycling as well as disposal options continues to be inconsistent and very unsatisfactory.

13. While we are mindful of resource constraints, not all improvements, for example improving web-based information, require a substantive budget beyond staff time. The quality of information on the website, and in and around places where people seek information about waste e.g. notices on bins, could all be improved. These improvements should not wait for 2019.

14. The diversity of Birmingham's communities should be recognised, and a targeted approach recognising this is the most cost-effective way of increasing participation.

15. We also need to be better about telling the positive story of Birmingham's waste collection service – how it increases recycling and benefits in the city in economic and environmental terms.

[71] LGA Waste p29

5.3 Understanding Waste in Birmingham

5.3.1 If Birmingham is to plan for a new resource-efficient, low-waste economy and can only do so with improved data. In a city of Birmingham's size and diversity this is essential to ensure assumptions made about Birmingham's future needs are as accurate as possible. Having several years' real figures on which to base forecasts and plan services accordingly is important in preparing for Birmingham's waste needs post-2019.

5.3.2 As we have already commented throughout this report, there are many gaps in the data needed before key decisions can be made:

- The impact of the wheelie bin roll-out on volumes, recycling rates – although there are projections, it is too early to test those;
- Flytipping and where it occurs.

5.3.3 Many of these areas are of course in flux due to Service Review processes and budget reductions.

5.3.4 The Committee discussed the use of the Waste and Resources Assessment Tool for the Environment (WRATE) methodology during the evidence-gathering (see Box 11). Birmingham has completed a WRATE and the results were awaited at the time of writing.

Box 11: Waste and Resources Assessment Tool for the Environment (WRATE)

The Waste and Resources Assessment Tool for the Environment (WRATE) allows the modelling of all stages in the management and processing of waste as well as the infrastructure required for these activities and the avoided impacts associated with materials and energy expenditure

BCC have not used the Waste and Resources Assessment Tool for the Environment (WRATE), but it was the view of some of our witnesses that this is of more use now (it was said that this was not needed in past to achieve the current recycling level, but to increase these further this "fine tuning" tool would be of use).

As part of the Weekly Collections Support Scheme bid, an environmental impact analysis was carried out which calculated that the proposed change of collection methodology would result in a reduction of 149,602,688 kgCO2e over a five year period. Whilst this is not the WRATE assessment tool, it is an equivalent tool available through DEFRA to assess disposal/recycling/treatment and looks at the change in carbon impacts associated with proposed systems.

Although a decision-making tool, the WRATE analysis needs to be used in conjunction with other criteria..

5.3.5 Further to this, knowledge sharing is also important. Researchers at EBRI told us:

> "The majority of companies involved in the knowledge transfer activities would not be usually classified as being in the waste of recycling industries. The companies involved range from high tech engineering and systems integration, services and support companies. The work to date illustrates that a diversity of

skills and talent can focused on the development of the growing renewables sector. The key to opening this opportunity fully in the local area is the nature and structure of the contracts between the council and waste service suppliers."

Findings

16. **There needs to be a clear evidence base to inform any new strategy. This should include analysis of the composition of residual waste carried out regularly and extended to recycling to enable both ongoing comparison and, most importantly, effective modelling of Birmingham's waste arisings. Any new strategy cannot just be about "tweaking" current arrangements and so good information is crucial.**

17. **Any new contractual agreement need goods governance processes to ensure that intelligence is absorbed as it becomes available. Data capture is critical here, including capturing interrelationships between population densities, housing and industrial requirements;**

18. **There is also a need to match the gap in market intelligence between private and academic sectors.**

5.4 Maximising the Benefits for Birmingham's Economy

5.4.1 Throughout this report, the value of waste has been discussed. In this section, the value of waste to the local economy is considered. Waste management is a source of economic growth and jobs if the domestic market is encouraged. The City Council should be looking to unlock this potential locally and seize the opportunity to consolidate social value and environmental returns too.

5.4.2 The LGA Wealth from Waste report found that, nationally, it has been estimated that 70% recycling would create an additional 51,400 jobs. When calculated on the basis of the value each of these jobs would add, this would provide an additional £2.9 billion gross value added contribution to the UK economy:

> The simple fact is that taxpayers will be better off, the economy will benefit, and more people will have jobs if we grow our domestic market for collecting, sorting and reprocessing recycling.
>
> Local government therefore needs to look beyond our role in simply ensuring the country meets its EU waste targets by 2020, and explore how councils can develop the waste and recycling sector to unlock its true potential, generating 51,400 jobs nationwide and expanding a vital revenue stream for council tax payers in a tight financial climate.

5.4.3 There are examples of how, on a smaller scale, a contribution to the local economy can be made. Jericho, at the Norris Way re-use centre, worked with the local job centre and targeted recruitment in the local area, employing four full time and one part time member of staff. They also had three volunteers, four apprenticeships and ten school placements in the reuse centre. Career progression is important and staff are trained to NVQ level 2. They would like to develop an NVQ for reuse.

5.4.4 There is a practical example of how waste can be used to generate economic growth in the Tyseley Environmental Enterprise District (TEED) – where the Tyseley EfW plant is located. It covers over 230 businesses and around 100 hectares of traditional industrial and employment land. It has been designated to exploit the growth in resource recovery and low carbon technologies.

5.4.5 There are proposals at Tyseley Wharf and Energy Way for new high quality business park environments; property assistance programmes to improve the range and quality of property available to business. Work with academic institutions and a local business is on-going to foster environmental technologies symbiosis and the opportunities for green energy solutions.

5.4.6 The focus on Tyseley was seen as beneficial as there is a cache and interest attached to the area, so businesses feel it is a suitable location to be near. Waste industries themselves tend not to be high employers (and land hungry) but there are many associated benefits and spin offs.

5.4.7 TEED is being supported both through the draft BDP and the Green Commission Vision statement:

> "To exploit the opportunities, particularly through resource recovery and energy production, Tyseley has been designated an Environmental Enterprise District. This aims to promote the creation of new environmental business parks at Tyseley Wharf and Energy Way, fostering environmental technologies symbiosis through work with academic institutions and exploiting opportunities from the Energy Recovery Facility."

5.4.8 It goes on to say that "TEED will become the principal location for the green economy in Birmingham, encouraging recycling, energy production and renewables including manufacturing and supply chain development. Redevelopment or refurbishment of vacant and underutilised sites in the areas has the potential to provide in excess of 100,000 sqm of new floorspace, creating 1,500 jobs."

5.4.9 International Synergies, which leads the National Industrial Symbiosis Programme (NISP), has completed a ground-breaking study on resource efficiency for TEED and Birmingham. The NISP network brings together industries and manufacturing organisations that would traditionally operate separately, to swap "waste" materials that could be used profitably by others.

5.4.10 NISP has been described as “the best example of the low carbon economy in action today”. NISP has helped to create and safeguard 3125 West Midlands jobs, generating £330 million in sales and saving £195 million in costs in the region, since its formation in 2005.”

5.4.11 During the course of the inquiry, the Committee learned of a new biomass plant opening in the area – this was a missed opportunity in terms of working together with the private sector.

Box 12: Case study – Unlocking growth through investment in infrastructure on Teeside

The five local authorities of Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland and Stockton in the Tees Valley are proving that exceptional cooperation between local authorities and their Local Enterprise Partnership to create the highest standards of business support, can benefit industry, generate inward investment and bring jobs to an area. Seizing on their industrial heritage, existing skills in chemical and process industries and a location which is ideal for export and the distribution of goods to the rest of the UK, the area is driving the transition to more renewable forms of energy. One of the key new sectors is coming from investment in world leading waste to energy projects. Potential investors can take advantage of expertise the area’s local authorities have developed in handling complex planning requirements to facilitate major international investments. Local Enterprise Zones benefit from simplified planning, enhanced Capital Allowances and Business Rate relief. An innovative gasification project using local authority and commercial waste will provide renewable electricity for up to 50,000 homes whilst construction of an anaerobic digestion bio-gas plant and a large energy from waste plant is also confirmed. This will involve £600 million of planned and on-going investment amounts, which will provide 1,120 construction and 130 permanent jobs. By working together Tees Valley authorities are realising their aspirations to grow an internationally significant critical mass of major industry players, creating a true centre of excellence for the sector.

Box 13: Jericho – Case Study

This project is a partnership between Jericho, Veolia and the City Council. Whilst Jericho received some funding from WRAP, the short term nature of this 2 year contract is proving problematic when trying to bid for further funding i.e. the Green Bridge Programme.

The Reuse centre opened in February and after two weeks they were "bursting with stock". They have already hit their 2 year target in 7 months and currently report on the guidelines from WRAP who provided them with some start-up funding. Below is the detail for their first year of trading (Feb 2013 to Feb 2014):

Item	Tonnage in	Tonnage out (reused)	Tonnage out (Recycled)	Disposal	Stock
Bikes	16.8	5.7	1.2	1	8.9
Furniture, bric a brac etc	105.84	31.92	6.72	11.2	56
Textiles	37.8	11.4	2.4	4	20
WEEE	26.46	7.98	1.68	2.8	14
Totals	**186.9**	**57**	**12**	**19**	**98.9**

For every £1 spent this results in £4.37 social benefit;

In order to encourage people to use the re-use centre:

- A leaflet on the Reuse Centre is given to people who use the Household Recycling Centre where it is felt the items could be reused (ultimately it is up to the resident to decide what they do with their items);
- They have a resident artist who has their own community organisation on site;
- They have a Facebook page that shows how items can be reused and it also displays some of the items on sale etc: https://www.facebook.com/TheReUsers
- They sell items on e-bay and will also hire out items;
- Things that don't sell are moved to their other charity shop;

Staff undertake a PAT testing course which allows them to sell electrical items (unlike Charity shops);

For the future, Jericho will be maximising the site and will be creating a tool room and dedicating an area for children etc. They will work with a charity - Trikes and Bikes to maintain bikes. However, there is a space issue and they cannot take everything so they will be exploring creating a synergy of partnerships and small community projects so they can prop up social enterprises in the city.

Being based by the Household Recycling Centre helps and is easy to use for residents. They would like to see this continue at Norris Way and rolled out at the other Household Recycling Centres.

6 Conclusions and Recommendations

6.1 Main Findings

6.1.1 This inquiry set out to explore what needs to be done to ensure that Birmingham has the most sustainable and efficient waste/recycling strategy post-January 2019, when the current waste disposal contract with Veolia comes to an end.

6.1.2 In talking about sustainability, we have in mind the "Brundtland"[72] definition of sustainable development which is about meeting "the needs of the present without compromising the ability of future generations to meet their own needs." The future solution has to be sustainable both in environmental and economic terms.

6.1.3 This report has recognised that Birmingham does not start with a blank sheet of paper. Some of the factors that must be taken into account put the city in a strong position: the existence of the Tyseley Energy from Waste plant for example (and even where Birmingham does not own the infrastructure, the large volumes of recyclate produced by the city puts it in a strong position with regards to negotiating with operators of Materials Recovery Facilities, such as the one currently used by Veolia at Four Ashes near Wolverhampton).

6.1.4 Other factors represent more of a constraint – the financial position of the local authority is the most obvious, and this report has spent some time exploring the various ways in which this must affect any future strategy. The amount and variety of legislation coming from Europe and Westminster is also a major consideration. Whilst these focus on improving environmental performance, the pace and challenge of the changes are not always within the control of the City Council. And last but not least, the changing demands of the citizens of Birmingham must be assessed, monitored and taken into account.

6.1.5 All these factors have been considered and analysed in this report to result in a series of options for the Executive to consider. In doing so, the Committee identified four areas for recommendations, which are set out below.

6.2 A New Strategy for 2019

6.2.1 Establishing a clear guiding principle that set out what the city wants to achieve from its waste strategy would ensure a coherent and transparent approach to any new waste disposal arrangements and provide a mechanism to negotiate the decision-making process. There will be many decisions to be made, with competing advantages and disadvantages. Setting some guiding

[72] Report of the World Commission on Environment and Development: Our Common Future, UN 1987; http://conspect.nl/pdf/Our_Common_Future-Brundtland_Report_1987.pdf

principles would ensure a coherent and transparent approach to any new waste disposal arrangements and provide a mechanism to negotiate the process.

6.2.2 The report sets out the need to involve the citizens of Birmingham in this exercise, as a matter of good principle and to ensure "buy-in" (a requirement as householder engagement will be critical to the success of any strategy).

6.2.3 Any new strategy should also recognise that Tyseley EfW plant is a key part of our waste disposal infrastructure and is not "broken". It is the main contributor to Birmingham's low rates of landfill. Retaining the plant will mean low capital costs for a further 15 years and would allow the City Council to progressively introduce newer technology and/or facilities to address the waste hierarchy, at a speed which could be most responsive to technological, environmental and municipal budget imperatives. Furthermore, there are options to invest in Tyseley to maximise value, and these should be explored fully.

6.2.4 By continuing to use Tyseley, there is time to investigate the options for more environmentally advantageous ways of dealing with our waste. Recycling and disposal technologies are fast evolving and we cannot predict where these technologies will be in the next 5, 10, 20 years. The city needs to maximise the use of new technologies – but also be aware of how quickly these change, especially in order to protect the capital investment this would involve.

6.2.5 Linked to this is the need for the future strategy to be capable of making links with other agendas – such as energy generation, energy saving targets, housing plans or other waste collected in the city.

6.2.6 Finally, there needs to be a clear evidence base to inform any new strategy. This should include analysis of the composition of residual waste carried out regularly and extended to recycling to enable both ongoing comparison and, most importantly, effective modelling of Birmingham's waste arisings. Any new strategy cannot just be about "tweaking" current arrangements and so good information is crucial.

	Recommendation	Responsibility	Completion Date
R01	That a wide-ranging exercise to engage Birmingham citizens in the creation of a new waste strategy (see R03) is undertaken; utilising the principles set out in the District & Public Engagement O&S Committee's report "Citizen Engagement".	Cabinet Member, Green, Smart & Sustainable City	September 2015
R02	A clear evidence base is established to underpin the new strategy. This should include on-going analysis of waste and recyclate collected.	Cabinet Member, Green, Smart & Sustainable City	September 2015

	Recommendation	Responsibility	Completion Date
R03	That a new Waste Strategy for the city is put in place. This should include the following: • A guiding principle, or set of guiding principles, to ensure a coherent and transparent approach to any new waste disposal arrangements; • A waste prevention plan for the city; • A consideration of all waste streams in the city including a mechanism for reviewing and, where appropriate, including new technologies to maximise the efficiency and effectiveness.	Cabinet Member, Green, Smart & Sustainable City	March 2016

6.3 A New Contract

6.3.1 One of the main messages from the evidence gathered was the importance of the concepts of flexibility, scale and time, which are key to future waste to resource contracts. These are all interdependent and cannot be seen in isolation. In terms of cost benefit, these elements can be traded off against each other – for example, prioritising cost savings leaves potentially less flexibility for innovation (these trade-offs are one reason why the principles referred to in 6.2 are so important).

6.3.2 Nevertheless, where changes are needed in response to financial, social or environmental imperatives, these should not be precluded or made difficult by the contract.

6.3.3 Any new contractual agreement need good governance processes to ensure that intelligence is absorbed as it becomes available. Data capture is critical here, including capturing interrelationships between population densities, housing and industrial requirements.

6.3.4 Recommendation 04 asks that the plan for the necessary procurement exercises is brought for consideration by the Committee, to check and challenge how these elements will be incorporated. In addition, under the terms of the contract, Veolia are obliged to return the plant in good working order that is both efficient and compliant with relevant regulations. The Committee recommends that a full inspection is conducted to guarantee that.

	Recommendation	Responsibility	Completion Date
R04	That a draft procurement plan to achieve the goals of the Waste Strategy is brought to the committee for discussion. This to include the following: • How income / financial efficiency will be maximised from the new approach; • How flexibility in future contractual arrangements will be achieved; • A statement on the role the Tyseley Energy from Waste (EfW) Plant will play and how opportunities to invest in Tyseley to improve both economic and environmental performance will be fully explored; • How the City Council will be in a position to react to and employ new technologies in waste and recycling processing.	Cabinet Member, Green, Smart & Sustainable City Cabinet Member, Commissioning, Contracting and Improvement	November 2015
R05	As part of the management of the current contract, arrangements are made for a rigorous analysis of the Tyseley plant and site, to be conducted prior to the hand-over back to the City Council. This should include full inspection by appropriate experts to ensure that the plant and site are returned in accordance with the contract, and that any losses are fully accounted for.	Cabinet Member, Commissioning, Contracting and Improvement	December 2017

6.4 Education and Information

6.4.1 Good customer services, education/information and communication are all critical in driving up recycling rates. The findings of the inquiry indicated that waste-specific communications are not being approached strategically in Birmingham. As a result, communication with residents about waste prevention, re-use and recycling as well as disposal options continues to be inconsistent and very unsatisfactory. This needs to change. The last few months have shown the importance of getting information about change across with regards to the green waste collection charges. This exercise should be reviewed and improvements made to future campaigns.

6.4.2 Whilst we are mindful of resource constraints, not all improvements, for example improving web-based information, require a substantive budget beyond staff time. The quality of information on the website, and in and around places where people seek information about waste e.g. notices on bins, collection day signs on streets, could all be improved. These improvements should not wait for 2019.

6.4.3 The diversity of Birmingham's communities should be recognised, and a targeted approach should be undertaken, recognising that this is the most cost-effective way of increasing participation.

6.4.4 In addition, the role of local Councillors should be emphasised – they have a role in informing residents and ensuring that information reaches all communities.

6.4.5 In supporting the move to increase recycling rates, there needs to better information about the treatment and destination of waste and recycling, and more information telling the positive story of Birmingham's waste collection service – how it increases recycling and benefits in the city in economic and environmental terms.

	Recommendation	Responsibility	Completion Date
R06	A revitalised waste communication plan is needed, taking into account the outcomes of the public engagement exercise in R01. This should include: • A range of communication options to ensure messages reach the widest possible audience; • More user-friendly detail about the destination of waste and recycling on the website; • Engaging with local Councillors to give them the resources to pass on key messages; • Engaging with local community groups/spaces (including schools, places of worship, community centres) to give them the resources to pass on key messages; • More information/explanation about why Birmingham has made the choices it has and the positive outcomes from that.	Cabinet Member, Green, Smart & Sustainable City	September 2015

6.5 Household Recycling Centres

6.5.1 Serious consideration needs to be given to review the numbers and locations of HRC sites. Concerns with the operation of the five current sites were raised during the evidence-gathering, and Members' own experiences supported these concerns.

6.5.2 A neighbourhood and district responsive position needs to be produced ahead of 2019. As a next step, the Committee will undertake some work in 2014/15 following presentation of a report from the Executive on the current position, and any work undertaken so far.

	Recommendation	Responsibility	Completion Date
R07	That a report is brought to the Connectivity & Sustainability O&S Committee on Household Recycling Centres (HRCs), their future and the options, with a view to the Committee undertaking a short piece of work on new HRCs in the city. The Committee's work will consider options for improving access to current HRCs, including • Opening hours; • Actions to reduce queues and congestion • Allow waste and recycling to be delivered on foot It should also address how the number of HRCs in the city might be increased, particularly with regard to smaller, more local, sites.	Cabinet Member, Green, Smart & Sustainable City	September 2014

6.6 Implementation of Recommendations

6.6.1 To keep the Connectivity & Sustainability O&S Committee informed of progress in implementing the recommendations within this report, the Executive is recommended to report back on progress periodically.

	Recommendation	Responsibility	Completion Date
R08	Progress towards achievement of these recommendations should be reported to the Connectivity & Sustainability Overview and Scrutiny Committee no later than December 2014. Subsequent progress reports will be scheduled by the Committee thereafter, until all recommendations are implemented.	Cabinet Member, Green, Smart & Sustainable City	December 2014

Appendix 1: Witnesses / Evidence

Graham Allardice, Senior Policy Advisor, Heat Networks	Department for Energy and Climate Change (DECC)
Rob Barker, Head of Service Delivery & Procurement Law	Birmingham City Council
Stephen Brooks, Investment Director, Heat Networks	Department for Energy and Climate Change (DECC)
Haydn Brown, Head of Category, Transportation & Utilities, Corporate Procurement	Birmingham City Council
Andrew Cousins, Bidding and Business Development	AmeyCespa Waste
David Cowing	Smurfit Kappa
Richard Craythorn, ReUsers Project Manager	The Jericho Foundation
Linda Crichton, Head of Collections & Quality Programme	WRAP (Waste & Resources Action Programme)
Peter Davies, Head of City Finance	Birmingham City Council
Brett Dennett, Development & Access Sustainability, Transportation & Partnerships	Birmingham City Council
Brian Dore, Senior Planning Officer	Birmingham City Council
Eddie Fellows, Highway Network Manager	Amey Plc
Ian Forsyth, Business Development Manager	Cofely District Energy
Sharon Freedman, Assistant Director, Regeneration	Birmingham City Council
Paul Greenwell, Managing Director	AmeyCespa Waste
Jane Hayward, Principal Bid Manager (Central Region)	SITA
Clifford Hill, Principal Regeneration Officer	Birmingham City Council

Mark Heesom, General Manager	Veolia ES (Birmingham) Limited
Tim Hughes, Principal Commercial Manager	SITA
Richard Kirkham, Technical Director	Veolia Environmental Services UK plc
Cllr James McKay, Cabinet Member, Green, Safe and Smart City	Birmingham City Council
Kevin Mitchell, Assistant Director, Fleet & Waste Management	Birmingham City Council
Steve Mitchell, Regional Director	Veolia ES Birmingham Ltd & Veolia ES Nottinghamshire Ltd
Michael Murray, Senior Development Surveyor	St Modwen
Bev Nash, Registrar	Birmingham City Council
Mark Saunders, Business Development Director	Amey Plc
Darren Share, Head of Parks	Birmingham City Council
Pete Smallwood, Social Enterprise Manager	The Jericho Foundation
Mike Smith, Head of Category, Special Projects, Corporate Procurement	Birmingham City Council
Sandy Taylor, Head of Climate Change and Environment	Birmingham City Council
Chloe Tringham, Waste Disposal Manager	Birmingham City Council
Tommy Wallace, Director of Fleet & Waste Management	Birmingham City Council
Simon Weston, Managing Director	Smurfit Kappa

Written Evidence Only

University of Birmingham (UoB)
European Bioenergy Research Institute (EBRI)
Birmingham Friends of the Earth (BFOE)
International Synergies

Bibliography

Birmingham Development Plan (BDP)
Community Energy Strategy, January 2014, DECC
Council Business Plan and Budget 2014+, Birmingham City Council
Energy from Waste: A Guide to the Debate, DEFRA (+ revised edition Feb 2014)
Food Waste Collection Guidance, July 2009, WRAP
Government Review of Waste Policy in England 2011, DEFRA
Investigating the Impact of Recycling Incentive Schemes, January 2012, Serco
Municipal Waste Management Strategy 2006 – 2026, November 2006, Birmingham City Council
Resource magazine, Spring 2014, Number 76
Refresh of the Municipal Waste Management Strategy, April 2012, Birmingham City Council
Safe, Clean and Green Neighbourhoods, November 2012, Birmingham City Council (Green Paper)
Waste Capacity Study 2010, Enviros Consulting Ltd for Birmingham City Council
Waste Management Plan for England, December 2013, DEFRA
Waste Strategy for England 2007, DEFRA
Prevention is better than cure; The role of waste prevention in moving to a more resource efficient economy, December 2013, HM Government
Wealth from Waste: The LGA Local Waste Review, June 2013, Local Government Association

Appendix 2: Performance and Volumes of Waste & Recycling

Waste Arisings by District & Wards

6.6.2 Fleet and Waste Management completed the roll out of Ward based working in June 2012 and have, since July 2012, been recording the tonnages collected by the main collection rounds for residual waste and recycling on a Ward basis.

6.6.3 There are, however specialised rounds, such as large container collections from flats and 'alleycat' rounds for difficult to access properties (narrow streets etc) where collections cross Ward boundaries or are mixed with trade waste collections and these collections are not included in the figures as it is not possible to associate tonnage with individual wards.

6.6.4 The collection of waste from flats in large containers will significantly impact upon the figures for those Wards with large number of flats.

6.6.5 Futhermore, waste received at Household Recycling Centres or collected from recycling banks is not included in Ward figures for similar reasons, therefore, the tonnages information and recycling rates will differ from the overall tonnages reported for the City as a whole.

6.6.6 Figure 12 below provides tonnages for the Districts from July 2012 to June 2013.

Figure 12: Tonnages by District Totals rolling 12 Months July 2012 to June 2013

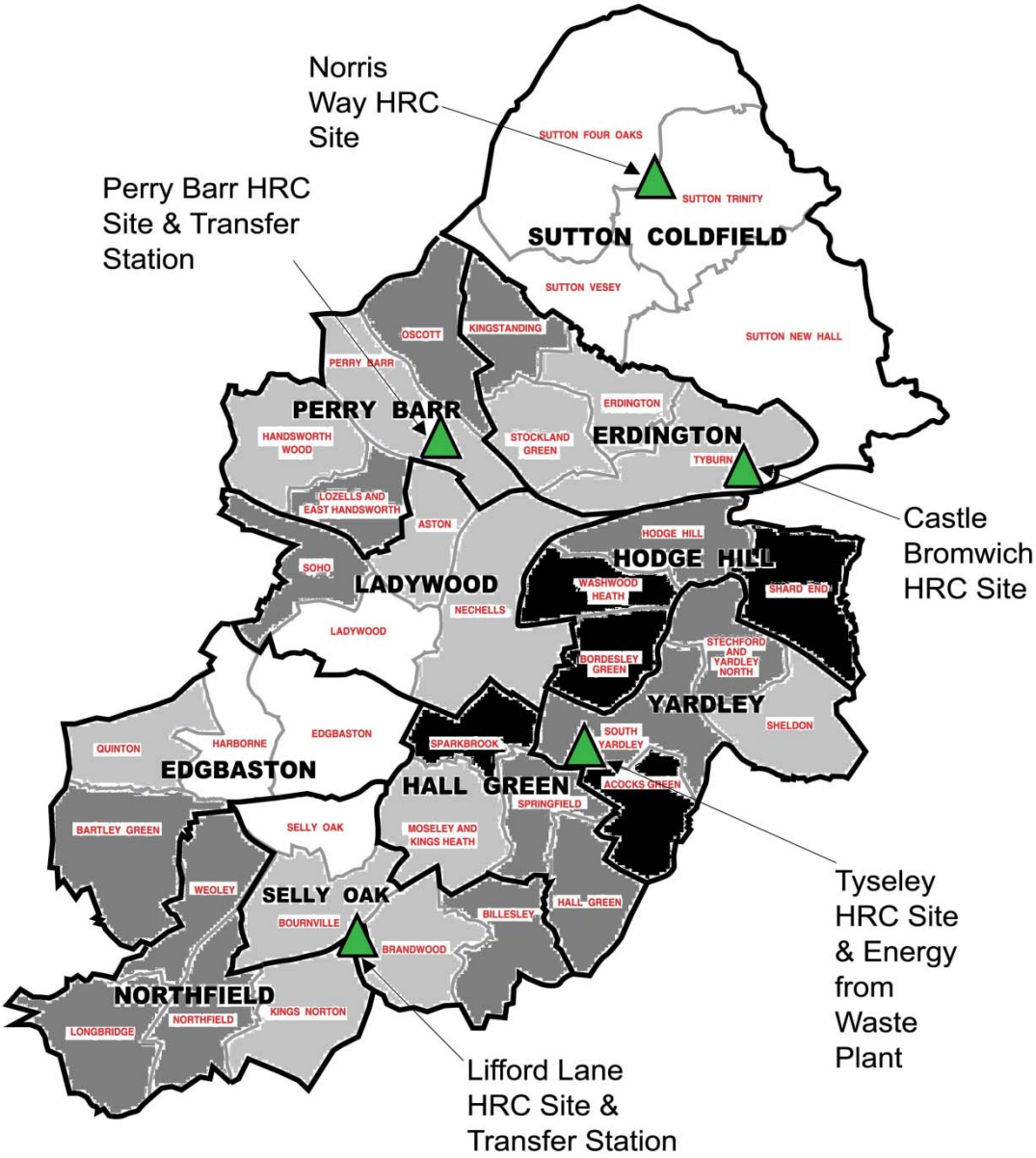
	Residual (tonnes)	Green (tonnes)	Multi (tonnes)	Paper (tonnes)	Totals (tonnes)	% Recycled
Edgbaston	16,457.26	4,170.84	1,684.96	2,034.59	24,347.65	32.41%
Erdington	18,565.86	4,570.41	1,565.85	2,254.12	26,956.24	31.13%
Hall Green	21,796.28	3,390.08	1,538.14	2,088.72	28,813.22	24.35%
Hodge Hill	25,631.78	3,108.24	1,233.24	1,757.90	31,731.16	19.22%
Ladywood	16,322.20	1,225.78	958.30	1,323.36	19,829.64	17.69%
Northfield	21,082.24	4,194.42	1,793.92	2,364.92	29,435.50	28.38%
Perry Barr	19,720.86	3,937.21	1,688.06	2,306.58	27,652.71	28.68%
Selly Oak	18,831.08	4,161.48	1,927.32	2,547.42	27,467.30	31.44%
Sutton Coldfield	13,978.16	6,699.18	2,503.48	3,218.14	26,398.96	47.05%

	Residual (tonnes)	Green (tonnes)	Multi (tonnes)	Paper (tonnes)	Totals (tonnes)	% Recycled
Yardley	22,567.12	3,668.60	1,679.68	2,311.86	30,227.26	25.34%
Grand Total	194,952.84	39,126.24	16,572.95	22,207.61	272,859.64	28.55%
Totals rolling 12 Months July 2012 to June 2013						
Source: Fleet and Waste Management Ward Based Data, Briefing Note for Transport, Connectivity & Sustainability O&S Committee, 20th September 2013						

Recyling by District & Wards

6.6.1 The diagram below provides the residual tonnages for the Wards from July 2012 to June 2013. Please note the caveats mentioned above.

Figure 13: Totals Residual Waste by Wards (rolling 12 months July 2012 to June 2013)



Residual Waste: Totals rolling 12 months July 2012 to June 2013 (tonnes)							
1,000 – 4,000		4,000 – 5,000		5,000 – 6,000		6,000+	

Appendix 3: Recycling/Bring Banks

Breakdown of Bring Banks in Wards (private sites - student halls of residence/school etc)

Ward	No. of public sites	No. of private sites	No. with glass banks	No. with paper banks	No. with textile banks	No. with shoe banks	Bra banks
Acocks Green	9	0	8	7	7	2	0
Aston	5	2	2	3	5	0	1
Bartley Green	11	0	3	6	5	3	2
Billesley	11	0	2	6	7	2	1
Bordesley Green	5	0	2	2	3	1	0
Bournville	10	0	5	2	6	1	1
Brandwood	10	0	5	4	8	1	0
Edgbaston	7	5	3	4	5	1	1
Erdington	9	0	4	4	8	2	1
Hall Green	8	0	5	6	7	4	0
Handsworth Wood	8	1	7	3	2	1	0
Harborne	15	0	7	11	9	3	0
Hodge Hill	9	0	4	8	7	7	1
Kings Norton	10	0	5	6	5	0	1
Kingstanding	10	0	3	2	5	0	1
Ladywood	10	5	9	7	6	1	0
Longbridge	11	0	6	7	5	4	2
Lozells & E. H'worth	13	0	9	2	4	3	2
Moseley & K. Heath	7	0	3	1	4	1	1
Nechells	20	6	5	9	10	0	2
Northfield	16	1	4	8	11	4	2
Oscott	11	0	4	7	5	0	0
Perry Barr	15	2	7	8	4	4	4
Quinton	9	0	6	7	6	2	2
Selly Oak	10	0	5	5	7	7	1
Shard End	11	0	7	8	7	7	0
Sheldon	12	1	4	8	7	5	0
Soho	6	0	3	1	2	0	1
South Yardley	14	0	7	8	8	3	1
Sparkbrook	8	0	2	1	6	0	2
Springfield	8	0	5	7	6	0	0
Stechford & Yardley N	9	1	4	4	5	3	0
Stockland Green	7	0	4	4	5	4	2
Sutton Four Oaks	10	0	3	4	7	2	2
Sutton New Hall	8	0	2	3	5	1	1
Sutton Trinity	7	0	4	5	5	4	0
Sutton Vesey	9	1	3	5	5	4	0
Tyburn	11	0	9	5	5	2	2
Washwood Heath	10	0	2	3	8	4	1
Weoley	6	1	4	4	4	1	1

Breakdown of Tonnes collected from Bring Banks in 2013

2013	Glass	Paper	Shoes	Cans	Oxfam (books)	Oxfam (textiles)	Traid	Islamic Relief	Salvation Army	Scope	BHF	Green World	Cohens	CTR	Wilcox	European Shoe (textiles)	BCR (textiles)	BCR (bras)
January	460.60	563.05	2.84	4.24	0.32	4.71	0.18	34.92	22.41	1.75	1.19	9.57	23.60		0.00	0.09	0.46	0.07
Feb	107.28	405.42	2.57	2.86	0.44	3.12	0.16	36.42	16.10	1.16	1.40	8.05	19.22		0.00	0.12	0.58	0.06
Mar	29.62	486.54	2.09	3.00	0.48	2.52	0.61	29.06	20.26	1.03	1.34	8.86	20.94		1.18	0.92	0.75	0.14
Apr	198.12	457.73	2.28	3.72	0.48	3.54	0.19	33.34	20.87	1.62	1.98	8.85	21.50		1.02	0.13	0.09	0.04
May	346.18	808.36	1.93	2.04	0.65	3.41	1.30	35.24	17.70	1.13	1.91	9.05	23.12		0.00	0.06	0.84	0.02
Jun	87.24	451.28	1.95	3.92	0.43	2.91	0.25	34.41	24.27	1.60	1.42	10.44	23.45		0.70	0.20	0.52	0.05
Jul	260.78	555.92	2.91	2.76	0.78	4.08	0.74	51.74	24.64	1.57	2.09	9.80	26.20		0.00	0.21	0.72	0.05
Aug	167.22	470.31	2.85	2.08	0.58	4.52	0.09	52.58	30.26	2.33	0.44	14.78	28.62		0.50	0.27	0.66	0.09
Sep	174.56	450.73	3.18	1.60	0.46	4.23	0.17	38.08	27.14	2.42	0.47	10.80	20.94	1.01	0.00	0.39	0.47	0.00
Oct	224	454	3.46	2.28	0.65	3.29	0.00	36.68	26.56	1.69	0.53	9.73		13.99	1.06	0.38	0.45	0.09
Nov	168	452	3.70		0.70	4.46	0.71	30.70	25.02	1.51	1.43	8.82		15.36	0.00	0.31	0.00	0.34
Dec	87	460	2.13		0.67	4.06	0.53	24.26	24.73	1.42	0.64	7.54		14.75	0.00	0.27	0.00	0.33
Total weight (tonnes)	**2,310.92**	**6,015.42**	**31.89**	**28.50**	**6.64**	**44.85**	**4.93**	**437.43**	**279.96**	**19.23**	**14.84**	**116.29**	**207.59**	**45.11**	**4.46**	**3.35**	**5.54**	**1.28**