



**LONDON WASTE ACTION**

*Promoting sustainable waste management in London*

# Market Based Incentives for Sustainable Waste Management in London

## Part A – Context and Conclusions

prepared by



**BROOKLYNDHURST**

Final Report - March 2007



## **Foreword**

In 2006 London Waste Action conducted a stakeholder dialogue on deficiencies in the management of waste in London and the changes needed to take London into the next stage of recycling and waste management. The outcome was presented as a formal report to the Mayor in May 2006 as a contribution to his Wider Waste Strategy Consultation.

Over 200 people, representing the main sectors and waste types, took part and they agreed on the key need to reduce London's dependence on landfill and for London to manage its waste sustainably. They emphasised the need for a comprehensive approach which addresses both the creation and the management of waste. In particular there was a broad acceptance of the need for new incentives, penalties and legislation to ensure a higher cost of disposal and a lower cost of reuse/recycling.

When asked to recommend just one policy within the full range of public policy options for maximum impact, stakeholders suggested a combination of financial measures designed to change the cost differentials of waste management. They suggested a number of measures: variable charging for waste management, tax breaks, rate rebates, fines, higher landfill taxes, differential landfill charges for waste types, a more complex resource tax, tradable recycling credits and waste permits, lower or zero VAT for recycled and reusable/recyclable products, free compulsory waste audits with cost benefit analysis and hypothecated revenues for use only in recycling.

To pursue this significant consensus further, LWA commissioned two consultants – Brook Lyndhurst and Eunomia – to collaborate on a research programme to explore such financial measures, and to develop recommendations for how they might be quickly and effectively brought to bear.

This is their report of seven possible instruments and three over-arching issues which could make a big difference to how we all behave.

While carrying out their work, consensus on the efficacy of financial measures has grown and there is increased debate on the range of possible measures, how they would impact on better resource and waste management and how they would react with each other. The need to manage our resources better becomes more urgent and we hope that our study will clarify options for doing this and enable good decision-making.

We thank Cleanaway and the Veolia ES Cleanaway Havering Riverside Environmental Trust for funding this work under the Landfill Tax Credits Scheme.

**Doug Benjafield**  
**Chairman - London Waste Action**

*This page intentionally blank*

## Contents

Introduction & Summary.....	1
Let's be Proud?.....	5
Perceptions.....	5
But things have been changing.....	6
Who's Involved?.....	8
Where there's muck, there's brass.....	10
The Possibilities.....	16
Instrument #1 - Carbon Credits for Recycling.....	17
Instrument #2 - Incentives for household recycling and waste prevention.....	17
Instrument #3 - Lower landfill tax for pre-treated waste.....	18
Instrument #4 - Variable charging for specified premises.....	18
Instrument #5 - Producer responsibility with full financial responsibility... ..	19
Instrument #6 - Residual waste levy.....	19
Instrument #7 - Tradable allowances for landfill of commercial and industrial waste.....	20
Instrument Overview.....	21
The Big Picture.....	22

© Brook Lyndhurst 2007

This report has been produced by Brook Lyndhurst Ltd under/as part of a contract placed by London Waste Action. Any views expressed in it are not necessarily those of LWA.

Brook Lyndhurst warrants that all reasonable skill and care has been used in preparing this report. Notwithstanding this warranty, Brook Lyndhurst shall not be under any liability for loss of profit, business, revenues or any special indirect or consequential damage of any nature whatsoever or loss of anticipated saving or for any increased costs sustained by the client or his or her servants or agents arising in any way whether directly or indirectly as a result of reliance on this report or of any error or defect in this report.

*This page intentionally blank*

# Introduction & Summary

## Introduction

Against a complex and rapidly evolving policy background, and with the intention of contributing to the discussions around a wider waste strategy for the capital, London Waste Action in 2005/06 undertook a stakeholder dialogue with a wide range of interested parties. One of the key areas of interest emerging from this process was the potential to use **economic instruments** to promote and ensure more rapid and effective progress towards meeting London's waste challenges.

In late 2006 LWA commissioned two consultancy practices – Brook Lyndhurst and Eunomia – to collaborate on a research programme to explore such instruments, and to develop recommendations for how they might be quickly and effectively brought to bear.

Two documents have been produced. The sister document to this report presents the full detail of the process by which potential instruments were selected, the analyses of those instruments and recommendations for their deployment. This present report presents a picture of the overall economic and policy background to contemporary waste issues, and provides a summary of the main points to have emerged from the detailed analysis.

The instruments discussed represent **ideas for debate and discussion** rather than finalised propositions: further detailed work would be required to develop the ideas fully, and to consider how they might interact with each other. Whilst focusing on London, the instruments – to a greater or lesser extent - have national relevance, and as a result the analysis is not restricted solely to the capital.

In broad terms, the instruments discussed in this pair of reports point towards the need for holistic, or “joined up” thinking when considering waste. Holistic thinking means thinking about not just the collection of recyclables, but the demand for products made from re-processed materials; it means thinking not just about the provision of kerbside collection, but about behaviour change strategies aimed at differing population segments; it means thinking not just about packaging waste in isolation, but how – for example - producer responsibility and variable charging for commercial waste collection might together deliver outcomes that are socially and environmentally and economically viable.

Perhaps the biggest piece of holistic thinking concerns **climate change**. The growing body of evidence supporting the view that human activity is changing the earth's climate is leading to a reappraisal of most areas of human endeavour, and waste is no different in this regard. Looking forward – as these reports do – it is not enough merely to consider how shorter term pressures and targets might best be met through economic instruments. Following Stern, the publication of the Draft Climate Change Bill and the launch of the London Climate Change Action Plan, it is clear that longer term thinking is required.

The fact that the thinking is long term does not, however, mean that the thinking can be postponed. This report seeks to contribute immediately to the thinking, by putting significant onus on the carbon and climate change related elements of

sustainable waste management, in the hope of contributing to the ongoing discussion of how best to meet both London's and the country's waste and climate change challenges.

## Summary

- London Waste Action's "Stakeholder Dialogue" in 2005 and 2006 revealed a strong interest in the potential of economic or market instruments to accelerate progress towards more sustainable waste management in the capital.
- Sustainable waste management refers not only to the need to reduce waste and increase recycling, but to the over-arching issue of climate change. Improved management of London's waste has the potential to make an important contribution to reducing the emission of green house gases.
- Achieving sustainable waste management faces a number of serious challenges. Perceptions of the waste sector are not generally positive; policies between different government departments, and between national and regional government, are not "joined up"; the funding of waste management is complex, and the costs to householders and businesses are opaque.
- However, powerful regulatory pressures have been increasing the profile of waste issues, particularly around recycling. The need for action is becoming ever more pressing; and the need for significant investment is becoming ever clearer.
- Forthcoming strategies at both national and regional level – in the case of the former, the successor to the National Waste Strategy 2000 is due in spring 2007, while the Mayor of London is presently developing a successor to London's Municipal Waste Strategy that will encompass all waste – will undoubtedly provide greater clarity on the policy position, while the findings of the Lyon's review, feeding into the Comprehensive Spending Review, will clarify some of the funding issues.
- Nevertheless, the opportunity exists to consider how economic instruments, or market mechanisms, could be used to accelerate progress towards sustainable waste management, and this research from Eunomia and Brook Lyndhurst explores seven possibilities, presented as ideas for debate and discussion:
  - **Carbon credits for recycling** - how might carbon be formally introduced into the management of and accounting for waste? And what sort of contribution to tackling climate change might be made by the waste sector? The research suggests that increased rates of recycling could make a significant contribution to the UK's and London's ambition to reduce emissions.
  - **Incentives for household recycling and waste prevention** – what might be the impact of introducing variable charging, or compulsory recycling? Could changes be made quickly so as to bring benefits in the shorter term? The research suggests that changes could be made quickly, and could have a significant positive impact in London.
  - **Lower landfill tax for pre-treated waste** – could lower landfill taxes on pre-treated waste provide a quick and cost-effective means of meeting LATS

- obligations? The research finds that low capital cost solutions could fit within existing industrial and planning policy, and make a strong contribution to meeting LATS obligations.
- **Variable charging for specified premises** – this slightly longer term measure proposes using bye-laws to implement a mechanism to ensure that collection systems offered to businesses and other enterprises (schools, universities, hospitals, pubs, etc.) are comprehensive in terms of materials being collected separately; and to introduce a requirement for differential charging for waste collection services for households. Although there may be some legal issues in the short term, the research suggests that this mechanism could work well in the capital.
  - **Producer responsibility with full financial responsibility** – also likely to take a little longer, this measure would be intended to give greater force to the ‘polluter pays’ principle and, if coupled with higher targets (in respect of packaging, for example), would encourage efforts to reduce the quantity of materials used and encourage design of products / packaging to make them easier to recycle. The research suggests that this measure could provide powerful impetus to waste minimisation, and fairer and more sustainable waste management that would be popular with the public.
  - **Residual waste levy** – drawing on lessons from a successful scheme in Wallonia, Belgium, this mechanism specifies a quantity of residual waste per inhabitant which could be generated free of any levy. For authorities whose generation of residual waste exceeded this ‘quota’, a levy on the excess would be applied (and re-distributed to authorities achieving below the quota). The quota would be reduced over time to encourage authorities to reduce residual waste. The research suggests that if London were to succeed as in Wallonia, residual waste could fall by up to 25%.
  - **Tradable allowances for landfill of commercial and industrial waste** – by introducing permits for landfill, and relying on the administrative infrastructure used for waste transfer notices, this mechanism would progressively constrain the landfilling of London’s waste. The research suggests that a trading scheme of this kind could work well in the capital, and make a significant contribution.
- Each of these instruments has the potential to have a positive impact in London, but there are clearly differences in the speed with which they could be implemented, the scale and speed of their likely impact, their political acceptability, the extent to which they could be implemented with or without new (national) legislation, and so forth.
  - Common themes running through the research include:
    - The need to simplify, clarify and make more robust the institutional arrangements associated with waste management
    - The need to devote sufficient resources to the development of waste management infrastructure, and to develop infrastructure in a manner suited to the 21<sup>st</sup> century not the 19<sup>th</sup> century

- The need to re-position waste within the context of a “resource economy” as an integral part of normal place-based management and planning
- Above all, waste management needs to adapt to the challenge of climate change, and those responsible for policies on climate change need to take greater account of the waste sector.
- The research suggests that this range of instruments, either singly or together, have the potential to contribute to the development of a genuinely sustainable waste management system in London and the UK, and that progress of this kind could move us to a position in which we could be genuinely proud of how we run our resource economy.

## Let's be Proud?

Is the UK's waste sector something of which we should be proud? Could it, for example, rank alongside our financial services sector, or our pharmaceuticals sector, or our higher education sector, as a demonstration of national success?

Do the institutions responsible for dealing with London's waste rank alongside the BBC or Vodafone? Can we imagine our leaders and statesmen boasting of our achievements in the waste sector on the international stage?

Are the potential social, economic and environmental benefits of a "world class waste service" for London and the UK widely understood or appreciated?

The answers are obvious. Waste remains "an invisible industry"<sup>1</sup>, a Cinderella sector, an embarrassing afterthought. Despite the unprecedented demands of tackling climate change, despite more than 30 years of European legislation, despite Landfill Tax (and its associated credit scheme) and sustainable development and the emergence of household recycling as "normal" activity, the management of waste in the UK and its capital remains "a problem".

## Perceptions

For many readers of this report, for whom waste management issues are a daily concern, it is easy to forget the perspectives of those for whom waste is a marginal issue.

Until only very recently, for example, householders in Britain were overwhelmingly disinterested in waste issues<sup>2</sup>: "rubbish" was just something that went into bins and was collected once a week by "the council".

For councils – that is, Local Authorities – waste was a statutory obligation, among the least exciting or interesting of their responsibilities. Waste Committees were populated by councillors unable to get positions on more glamorous areas of policy, while officers were occupied far from the public eye with arcane and obscure negotiations on long-run contracts.

For central government, too, waste was a low salience issue, tucked far away from the excitement of media headlines, international negotiations and competitiveness strategies. In 1997, the new Labour Government was able to say, in its first Budget, that:

*"Today's Budget places the environment at the core of the Government's objectives for the tax system."*

---

<sup>1</sup> "Bridging the gap between environmental necessity and economic opportunity", First Report of the Environmental Innovations Advisory Group, DTI/Defra, November 2006

<sup>2</sup> See, for example, "Household Waste Behaviour in London", Brook Lyndhurst for the Resource Recovery Forum and Cory Environmental, 2000/01

*The Government's key economic objective of high and stable levels of growth and employment will be pursued in ways that are environmentally sustainable. Under the new Government, where it is effective to do so, tax reform will be used to achieve environmental objectives"*<sup>3</sup>

However, it did not actually mention waste.

And for most businesses, too, waste has been and remains a very low priority. Some businesses – those involved in handling hazardous waste, or for whom waste management costs are significant, or that are involved in the packaging industry – take waste issues seriously, and treat them as an important business matter. The majority of businesses, however, are typically unconcerned with or even unaware of their waste<sup>4</sup>.

Put brutally, the caricature perception of the “waste industry” involves dustbin men, filthy landfill sites, and cowboy operators with unlicensed vans. Waste is not glamorous, it is dirty, and for most people, most of the time, it is not something about which they want to be upstanding and proud.

## **But things have been changing**

There is, inevitably, a lag between perception and practice. Many people are not aware of the high-technology, high-value-added solutions that are increasingly available to manage and treat waste. Many are not aware of the environmental benefits, for them and their children, of managing our waste in more sustainable ways, particularly in terms of greenhouse gases and the links between waste management and climate change. Many are not aware of the investment opportunities presented by future waste management requirements, or the employment opportunities that will be created. Many have not yet realised that, in a resource constrained world, the very term “waste” is becoming out-dated: material resources flow through an economy on a continuous basis, value is created and re-distributed, and what is “waste” in one place is a valuable raw material in another.

For the cognoscenti, many of these changes are now obvious, even commonplace. But, even for this group, useful perspective is offered by casting back just a few years.

Ten years ago – for example – London Waste Action was soon to come into being, and New Labour was soon to enter Government. A new tax – “landfill tax” – had come into being only a few months before (1<sup>st</sup> October 1996). The 1995 Environment Act had led to the 1996 “Making Waste Work”, the UK’s first national policy framework for waste management, but the finding of the European Court that the UK was still in breach of the 1975 (yes, 1975) Framework Directive on Waste was still two years into the future. Only by the adoption of the “Waste Strategy for England and Wales” in 2000 did national policy finally catch up with the 25-year-old

---

<sup>3</sup> Treasury press release, 2<sup>nd</sup> July 1997, available at:

<http://archive.treasury.gov.uk/budget/1997/hmt4.html>

<sup>4</sup> See, for example, the proceedings of the London Assembly's Environment Committee enquiry into this and related issues, 16<sup>th</sup> November 2006, available via [www.london.gov.uk](http://www.london.gov.uk)

European requirement (as well as the requirements set by Directives on landfill (1999), packaging (1994) and hazardous waste (1991))<sup>5</sup>.

The pace of change – both nationally and in London – has accelerated since. Driven primarily by a range of legislative requirements, an array of instruments and initiatives has changed both practice and perception. They include not only the Landfill Tax, but:

- PRNs [Packaging Recovery Notes]
- LATS [Landfill Allowance Trading Scheme]
- the establishment of WRAP [Waste Resources Action Programme] and voluntary agreements such as the Courtauld Commitment and national media campaigns on recycling [“Recycle Now”]
- investment by regional development agencies<sup>6</sup>
- a number of Remade programmes, including London Remade<sup>7</sup>

Alongside these developments, there has been a general increase in the awareness of environmental issues among both the general public and the business community, particularly in the past year; and awareness of the potential role of the third sector (voluntary and community and charitable groups) as an important partner in the management of waste at both national and London level has increased significantly.

In London, obviously and additionally, the period since 1997 has seen the formation of the GLA, the development and implementation of the London Plan, the implementation of a Mayoral Strategy on Municipal Waste, the proposal and rejection of plans to establish a Single Waste Authority for London, and the ongoing development of a wider waste strategy by the Mayor.

Of course, many things have not happened: producer responsibility is still not properly integrated into the UK economy; European Directives on, for example, waste electrical and electronic equipment, have still not been implemented; the UK still does not have a “closed loop” industrial park; and so on.

Nevertheless, the cumulative effects of these developments are many and various. Most obviously, the recycling rate in the UK (and London) has, after many years of being embarrassingly low, finally begun to increase, and at a rate that must be encouraging for all involved<sup>8</sup>.

---

<sup>5</sup> See “An Overview of European Waste and Resource Management Policy”, Forum for the Future/Biffaward, 2002

<sup>6</sup> See, for example, “Green Alchemy: Developing the Waste Reprocessing Sector in London”, 2003

<sup>7</sup> London Remade was originally set up using regeneration funding secured by London Waste Action – see [www.londonremade.com](http://www.londonremade.com)

<sup>8</sup> See <http://www.defra.gov.uk/environment/statistics/waste/kf/wrkf04.htm>

## Who's Involved?

Perhaps it is inevitable, at a time of rapid change in an industry, or an area of economic/social/environmental activity, that there should be some confusion about quite what is going on, or quite who is doing what. But the present situation, some major elements of which are worth briefly itemising, is not entirely convincing as a platform for moving forward:

**Defra** –“Defra's core purpose is to improve the current and future quality of life”<sup>9</sup>, and it has overall responsibility for waste policy in England and Wales. It is currently developing the successor to the national waste strategy of 2000, presently expected for publication in spring 2007.

**Department for Trade and Industry** –“The DTI is committed to helping British industry increase productivity and develop world-class competitiveness”<sup>10</sup>, and does this via a sectoral approach. The “environment sector” – which includes waste and recycling - has slowly been increasing its status as a sector within the DTI<sup>11</sup>, exemplified most recently by the publication of two reports:

- Emerging Markets in the Environmental Industries Sector, November 2006, produced by UKCEED for the DTI and Defra
- Environmental Innovation – Bridging the Gap between environmental necessity and economic opportunity – First Report of the Environmental Innovations Advisory Group, November 2006, produced in association with Defra

**DCLG** – the Department for Communities and Local Government “is responsible for national policy on local government in England”<sup>12</sup> including local government finance. It is therefore responsible for knowing and understanding the local budgetary implications of waste management.

**H M Treasury** - “The Treasury is the United Kingdom's economics and finance ministry. It is responsible for formulating and implementing the Government's financial and economic policy. Its aim is to raise the rate of sustainable growth, and achieve rising prosperity and a better quality of life with economic and employment opportunities for all.”<sup>13</sup>

In the 2006 Budget, Treasury devoted 6 paragraphs to waste & resources during the course of a 300-page report, stating that “Efficient use of resources and the effective management of waste are essential features of an environmentally sustainable economy.”

---

<sup>9</sup> <http://www.defra.gov.uk/corporate/index.asp>

<sup>10</sup> <http://www.dti.gov.uk/sectors/index.html>

<sup>11</sup> It is intriguing to speculate on the extent to which the “image” of waste – see Perceptions, above – contributes to the historically low status given to the sector's economic and employment significance. How would the DTI be treating an entirely new sector of the economy, for example, based on new technologies, with the potential to make a significant contribution to national sustainable development, and which had double digit growth prospects?

<sup>12</sup> <http://www.communities.gov.uk/index.asp?id=1133514>

<sup>13</sup> [http://www.hm-treasury.gov.uk/about/about\\_index.cfm](http://www.hm-treasury.gov.uk/about/about_index.cfm)

Treasury is responsible for negotiating with DCLG, DTI and Defra on the finances of waste, the vital future details of which lie with the forthcoming Comprehensive Spending Review – the publication of which has recently been postponed to Autumn 2007.

**Lyons Review** – The findings from the Lyon’s Review of Local Government Finances were published recently and, amongst other things, open the door for charging householders for the collection of residual waste. Whether or not the Government accept these recommendations will become clearer at the time of the Comprehensive Spending Review, presently scheduled for Autumn 2007.

**Review of Mayoral Powers** – following extensive consultation, the Government’s proposals for revisions to the Mayor’s powers concluded that there should not be a Single Waste Authority for London, the Mayor’s preferred option. The Bill is presently navigating its way through Parliament, and the final shape of amendments to the Mayor’s authority remains to be seen.

**Wider Waste Strategy for London** – the Mayor has announced his intention to develop a wider waste strategy – that is, covering all waste types, rather than simply municipal waste – and background material to the proposed strategy was published in 2004. At present, however, and in part as a result of the dispute over the review of the Mayor’s powers, there is no public date for the publication of the wider waste strategy.

In summary, and crudely, waste policy both nationally and in London is fragmented and unclear, and the hiatus caused by postponements and policy disputes leaves many vital issues in suspended animation.

At the same time, however, perhaps the most interesting and complicated development has been the emerging focus on the financial and economic dimensions of waste.

## Where there's muck, there's brass

It is possible to identify at least nine distinguishable aspects to the emerging economic and financial status of waste. These are of differing levels of significance in setting a new operating circumstance for the consideration of waste (in both policy and commercial terms), but it is their cumulative impact that is most important. We sketch the background to each of these nine aspects below.

### 1 Mainstream Economics

Various estimates have been made on the raw size of the waste sector in the UK. Perhaps reflecting the fact that, as hinted above, the sector has not historically received the fullest attention from the statisticians and economists, these estimates vary somewhat.

For example, a recent report for DTI and Defra<sup>14</sup> found:

"Defra's annual survey of industrial expenditure on environmental protection found industry spending £1.36bn on solid waste management in 2003. These figures are for the extraction, manufacturing and energy and water supply industries only, i.e. they do not include construction or service industries or the domestic sector, all of which are significant generators of waste (URS, 2005). Public expenditure on waste management was £3.3bn in 2003, rising to £3.5bn in 2004."

#### Turnover and employment for the waste management industry in 2004<sup>15</sup>

	Waste collection and treatment	Recycling	Totals
Enterprises	1354	1553	2907
Employment	52,000	17,000	69,000
Turnover	£4.9bn	£3.2bn	£8.1bn
Purchases of goods, material and services	£2.4bn	£2.4bn	£4.8bn

By contrast, in a report for HM Treasury<sup>16</sup>, Integrated Skills Ltd found that:

"The UK waste management industry currently [2003] has an annual turnover of around £4.2 billion."

while, in the same year, Defra/DTI suggested<sup>17</sup>:

<sup>14</sup> Emerging Markets in the Environmental Industries Sector, UK CEED for DTI & Defra, November 2006

<sup>15</sup> Ibid

<sup>16</sup> An Assessment of Options for Recycling Landfill Tax Revenue, Integrated Skills Ltd for HM Treasury, Feb 2004

<sup>17</sup> Mapping the UK Environmental Goods and Services Sector, EIU (Defra/DTI) 2004

“ONS returns for 2003 gave the waste sector a turnover figure of £14.6 billion.”

WRAP, meanwhile, estimate<sup>18</sup> turnover in just the recycling industry at £11.8bn.

These are wide variations, by any standard. Furthermore, for the purposes of comparison with other sectors of the economy, a more useful measure of economic activity is not, in fact, turnover, but value-added.

When asked about the gross value added by the waste management sector in England, Defra’s Environment Minister Elliot Morley reported<sup>19</sup> that the figure for 2002/03 stood at £776million – i.e. £0.8 billion – while net current expenditure by waste disposal and collection authorities in England was a mere £1.8 million<sup>20</sup>.

On the basis of standard metrics on the relationship between turnover and GVA (gross value added), the turnover figures above suggest that GVA for industry nationwide could lie in the range £1.4bn per annum to £10.5bn.

So as to provide some sense of the relative size of the sector, the following table provides a selection of comparative employment figures:

<b>Sectoral Employment Compared<sup>21</sup></b>		
Sector	UK	London
Post & telecommunications	487,100	85,800
Air transport	90,300	46,700
Food, drink & tobacco manufacturing	429,100	27,100
Electrical equipment manufacture	318,800	15,400
Electricity, gas and water supply	110,700	7,100
Agriculture	241,700	2,200
Waste management	69,000	8,700

It is with some discomfort, therefore, that it is not possible to say with any great precision or confidence exactly where in a league table of UK industry this evidently large and manifestly important sector should be positioned. It seems reasonable to assume, however, that with 69,000<sup>22</sup> employees and turnover in the multiple billions, this is a sector worth attending to as an economic sector *in its own right*, rather than as an environmental afterthought.

<sup>18</sup> [http://www.wrap.org.uk/businesses/investors/why\\_invest\\_in.html](http://www.wrap.org.uk/businesses/investors/why_invest_in.html)

<sup>19</sup> Source: Hansard, 10<sup>th</sup> February 2005

<sup>20</sup> This figure sits, initially at least, somewhat uneasily with the statement from “Emerging Markets in the Environmental Industries Sector” [footnote 8]: “Public expenditure on waste management was £3.3bn in 2003, rising to £3.5bn in 2004 (ONS, 2005b).” Even allowing for the distinction between net and gross spending, this discrepancy points towards the kind of opacity characteristic of waste sector finances.

<sup>21</sup> Data are from ONS via NOMIS, for September 2006 EXCEPT the waste sector figures, which are, for the UK, taken from the UK CEED report cited above, and for London, are derived from the UK CEED figure on the basis of the London share of “sewage and refuse disposal” employment

<sup>22</sup> Even this figure is contested: an HSE study proposed total employment in the sector of 160,000

## 2 Private sector

The growing status of and opportunities provided by waste management in the UK naturally attracts the interests of financial and corporate institutions. The *Options for Landfill Tax* report for HM Treasury, mentioned earlier, suggests that:

“The top six waste management companies account for at least 40% of [waste sector turnover] [i.e. £1.7bn]”

while the Emerging Markets report suggests that:

“the top eight waste management firms had a combined turnover of £2.9bn, out of a total turnover of £4.4bn”

These enterprises are, by and large, both profitable and growing. Recent mergers and acquisition activity can reasonably be interpreted as just the beginning of the process: if the forecasts and projections (see below) are to be believed, then interest from mainstream institutional investors and non-traditional corporates can only increase. This is, and will remain, a dynamic and expanding part of the UK economic scene, presenting mainstream commercial opportunities and bringing mainstream business challenges, solutions and profits.

## 3 Borough budgets

Long subsumed within the catch-all heading of “Environmental Services”, the precise costs and income for individual local authorities of waste management are by no means transparent. In the most recent official statistics<sup>23</sup>, for example, of the estimated net current expenditure in England in 2005/06 of £97.2bn, some £4.25bn (4.4%) was spent on “Environment” services, but the proportion of this spent on waste services is not published. Even more tellingly, the same source itemises capital spending (£16.6bn in the same year) but “Environment” is not separately identified.

The issue is even more pressing at the local level. It appears still to be impossible, for example, for the individual council tax payer to know the costs of collecting his or her waste, and of the savings or costs associated with different waste management solutions<sup>24</sup>.

It seems the case, however, that the combination of Landfill Tax, the threat of LATS fines (see below) and the costs of developing new waste management facilities has moved “waste finances” well up the agenda: waste may now be the third largest item of expenditure within the budget of a typical London Borough (behind education and social services).

---

<sup>23</sup> *Local Authority Expenditure and Financing*, DCLG/ONS, Statistical Release 30/11/07

<sup>24</sup> Brook Lyndhurst’s series of investigations into household waste behaviour in London, conducted in three waves between 2001 and 2006, repeatedly encountered beliefs among householders that recycling should save councils money, and these should be passed on in the form of lower council tax bills.

#### **4 LATS costs**

The significance of LATS – the Landfill Allowance Trading Scheme - for the economic and financial status of waste is considerable. In short, Local Authorities face the threat of EU-imposed fines (which UK government has said it will pass on directly to offending local authorities) at the rate of £150 per tonne of waste sent to landfill over and above allowances. Various estimates of the total scale of this financial threat exist, but a widely quoted figure of £180 million per year<sup>25</sup> appears to be proving sufficient to capture the attention of local authorities throughout London and the rest of the country.

Such fines have the potential to be sufficiently large so as to make a material difference to council budgets - and, by extension, to political calculations. No councillor is going to want to have to explain to the local electorate that waste fines means there is no money for school improvements. Together with the other economic and financial elements discussed, the threat of fines adds powerfully to the momentum of change.

#### **5 Fining Households**

Very recently, Local Authorities have begun to raise the prospect of fining individual householders for failing to comply with local waste management and recycling requirements. The London Borough of Barnet moved first on this; most recently, the London Borough of Hackney has informed its residents that recycling is now compulsory, and that fines will be levied on “persistent offenders”.

This is an interesting development. Clearly, facing the growing costs of waste management, as well as the threat of further costs if targets are not met, it makes sense for a local authority to maximise recycling. The threat of fines for non-compliance could well provide a powerful incentive to householders, which should help the local authorities. (Though it should be noted, as LB Hackney has pointed out in their communications material to residents, that the fines levied will NOT go to the Council.)

Conversely – and, in the present context, most interestingly – by raising the profile of the costs and benefits of waste management, local authorities will inevitably draw attention to the question of how much it actually costs to take away the “rubbish”. Greater transparency is certainly to be welcomed (the present level of opacity can serve only to deny tax-payers, householders, businesses and other “consumers” of waste services a full understanding of whether they are getting value for money) but the outcomes may not be entirely to the liking of established players, in either the public or private sector.

#### **6 Landfill Tax**

Having risen from £7 in 1996 to £21 today, and with the stated intention of increasing to £35 per tonne, there is no doubt that Landfill Tax has changed the economic landscape of waste management in the UK. There remain voices that argue that Landfill Tax needs to be as high as £80 or £90 per tonne before its full

---

<sup>25</sup> <http://www.letsrecycle.com/legislation/landfillallowances.jsp>

benefits will come to fruition, but – again, in the present context – the significance of Landfill Tax has been its contribution to the seriousness with which waste is treated in economic and financial terms.

## **7      *Infrastructure & facilities***

Still further profile has been given to the financial dimension of waste by recent attention upon the infrastructural needs of the sector. In the recent past, the questions of waste infrastructure – what is needed, who should provide it, how should it be funded and so forth – have provided stakeholders with an opportunity to play what has been described as “pass the parcel” with the responsibility. In London, in particular, the period between the abolition of the GLC and the formation of the GLA was a period in which little or no waste infrastructure was constructed.

The growing pressure to address waste issues in both the short and medium term has, more recently, highlighted the importance of waste infrastructure. In London, for example, the Mayor’s analysis suggests that as many as 300 waste management facilities need to be built in London over the period to 2020, with associated costs of more than £1bn.

Thinking nationally, the Institute of Civil Engineers, quoted in the “Emerging Markets” report cited above, estimated in 2004:

“that from 2004 to 2020 the UK will need between 1500 and 2300 new facilities to recycle, reprocess, treat and dispose of its waste at a cost of between £10bn and £30bn to meet the EU Landfill Directive’s requirements for diversion of biodegradable municipal waste from landfill.”

The ranges given here, as well as the fact that the Mayor’s figures are contested by some, highlight the dilemma. On the one hand, these are very large numbers, which will be associated with considerable commercial activity and large-scale contracts, but which inevitably come with risks attached. On the other hand, the persistent uncertainty about what is actually needed acts as a self-sustaining block to further progress.

## **8      *Materials & substitution & trade***

An underlying part of the complexity of waste economics emerges as a result of the range of materials included in “waste”, and the differing economic conditions that affect different waste streams. The costs of collecting, separating, cleaning and processing different streams; the comparative economics of treatments in local, national or international markets; the relative costs of raw materials, the ease with which recyclates and virgin materials can be substituted for one another, the economies of scale associated with different production technologies; all enter the equation of which solution is most financially viable for any given type of waste. All these elements are – as with any commodities market – changing on a continuous basis, inferring innumerable risk and return calculations that must be borne by someone, somewhere.

Still further complexity is added by issues surrounding the definition of waste, the regulations governing the safety of different waste streams, the fact that ownership

of materials at different stages in the chain can vary from location to location and from material to material, and the fact that different enterprises choose to concern themselves with different parts of the “value chain”.

A full analysis of this lies beyond the scope of this current work, but, as with other economic/financial issues highlighted here, the key point is that considerations of this kind have become progressively more important in recent years, as the notion of “secondary materials” and resource-flow economies has become established, and as multiple players have sought to develop the demand side for recyclates<sup>26</sup>. As the market continues to develop, as the size of the sector expands, attention on this area can only grow further.

## **9 Forecasts and projections**

It has been asserted routinely in the above eight sub-sections that the “waste sector” in London and the UK is destined for strong growth in the future. There is a uniformity of view among policy-makers, commentators and industry specialists that this is the case. Put simply, the legislative drivers are so powerful that the industry has no option but to grow.

As with estimates of the size of the sector, there are corresponding variations in the projections of the future:

“The market for [Waste Management] is estimated at £8.1bn for 2005, growing to £11.4bn in 2010 and on to £15.9bn by 2015”<sup>27</sup>

“Driven by Government policy and legislation at both UK and EU level, [the recycling] sector turnover is predicted to expand rapidly to £20-£30 billion within 15 years”<sup>28</sup>

As before, it matters rather less which figure is actually correct: what matters is that this is a sector of the economy that seems likely to double in size over the next decade or so. Growth of this kind is very unusual in a mature economy like that in the UK, and serves only to reinforce the general pattern of increased attention to the economics of waste.

---

<sup>26</sup> Including, for example, the Mayor’s Green Procurement Code, funded by the London Development Agency and delivered by London Remade

<sup>27</sup> Emerging Markets In the Environmental Industries Sector, DTI/Defra November 2006

<sup>28</sup> [http://www.wrap.org.uk/businesses/investors/why\\_invest\\_in.html](http://www.wrap.org.uk/businesses/investors/why_invest_in.html)

## The Possibilities

These factors taken together – the policy hiatus, the emerging economic and financial status of waste, the developing policy agenda on sustainable development, and the sheer scale of the contemporary waste challenge – were the backdrop to our detailed investigation of possible economic instruments that could make promote and ensure more rapid and effective progress towards meeting our waste challenge.

**SEVEN** types of instrument are considered: they apply to both London and the country as whole; they cover, between them, all waste types; and they all, to a greater or lesser extent, appear to have the potential to make a real difference:

- **Carbon credits for recycling** - how might carbon be formally introduced into the management of and accounting for waste? And what sort of contribution to tackling climate change might be made by the waste sector? The issues here are long term, but urgent.
- **Incentives for household recycling and waste prevention** – what might be the impact of introducing variable charging, or compulsory recycling? Could changes be made quickly so as to bring benefits in the shorter term?
- **Lower landfill tax for pre-treated waste** – could lower landfill taxes on pre-treated waste provide a quick and cost-effective means of meeting LATS obligations?
- **Variable charging for specified premises** – this slightly longer term measure proposes using bye-laws to implement a mechanism to ensure that collection systems offered to businesses and other enterprises (schools, universities, hospitals, pubs, etc.) are comprehensive in terms of materials being collected separately; and to introduce a requirement for differential charging for waste collection services for households.
- **Producer responsibility with full financial responsibility** – also likely to take a little longer, this measure would be intended to give greater force to the ‘polluter pays’ principle and, if coupled with higher targets (in respect of packaging, for example), would encourage efforts to reduce the quantity of materials used and encourage design of products / packaging to make them easier to recycle.
- **Residual waste levy** – drawing on lessons from a successful scheme in Wallonia, Belgium, this mechanism specifies a quantity of residual waste per inhabitant which could be generated free of any levy. For authorities whose generation of residual waste exceeded this ‘quota’, a levy on the excess would be applied (and re-distributed to authorities achieving below the quota). The quota would be reduced over time to encourage authorities to reduce residual waste.
- **Tradeable allowances for landfill of commercial and industrial waste** – by introducing permits for landfill, and relying on the administrative infrastructure used for waste transfer notices, this mechanism would progressively constrain the landfilling of London’s waste.

The sister report sets out the full background to, explanation of and propositions for each of these instruments. They are summarised in the remainder of this report.

## **Instrument #1 - Carbon Credits for Recycling**

The ongoing review of the English waste strategy is being examined through a lens which is designed to reveal the implications of different waste management approaches for the release of greenhouse gases (GHGs). WRAP has also recently carried out a review of life-cycle studies<sup>29</sup> seeking to understand the effects of recycling in the UK on climate change. The evidence appears to be clear – there are major GHG savings to be made by increasing the rate of recycling of materials.

Our brief analysis suggests that the first best solution for achieving this would be a global tax on all greenhouse gas emissions. This would lead to a situation in which all emissions were accounted for from all sources in all locations. However, this is not on the horizon at present.

A second way of ensuring that recycling was incorporated into national inventories, and hence into mechanisms designed to valorise carbon in the quest to meet these, would be to amend the accounting principles for reporting to the IPCC. This may seem unlikely at present, yet we believe this has real prospects to be implemented in the medium-term. In the short-term, consideration ought to be given as to how 'waste' can be incorporated into the European Emissions Trading Scheme in such a way that the benefits associated with recycling are recognised (thus far, the emphasis in this regard has been on the inclusion of incineration).

Finally, it is also worth considering how a household's recycling habits might be incorporated into any future system involving personal carbon allowances (PCAs). These have attracted some attention recently and led to Defra funding a short study on the issues which PCAs might raise.<sup>30</sup> Our analysis suggests that a number of significant barriers presently exist in respect of such an idea, and effort could more usefully be concentrated, in the short and medium term, on the IPCC and ETS routes. Early data suggest that the benefits from recycling may be significant, and the economics of climate change clearly have the potential to radically change the economics of recycling. In addition, the economics of materials use would also be influenced in a profound manner.

## **Instrument #2 - Incentives for household recycling and waste prevention**

This is effectively a group of policies, covering compulsory recycling, incentives for recycling / prevention, and charging households for waste. Considering the relative advantages and drawbacks of these different approaches, and in the light of what might be possible for councils to deliver with or without intervention from Government in respect of the legality of variable charging, the research concludes that, once the quality of recycling services has reached a sufficient minimum

---

<sup>29</sup> WRAP (2006) *Environmental benefits of recycling: An international review of life cycle comparisons for key materials in the UK recycling sector*, May 2006

<sup>30</sup> Simon Roberts and Joshua Thumim (2006) *A Rough Guide to individual Carbon Trading: The Ideas, The Issues and The Next Steps*, report to Defra, November 2006.

standard, the key requirement is to ensure that households 'see' the benefits of marginal reductions in waste set out for disposal. Charging schemes are favoured from this perspective.

As regards recycling, on the basis of costs and benefits, compulsory recycling probably comes second, while incentive schemes are likely to be more demanding on resources, and their effect is uncertain. Our analysis suggests that charging schemes may have the potential to achieve an increase in recycling of around 15% and a reduction of waste quantities of around 5%; while compulsory recycling could increase recycling by 10-24%.

To us, it appears that boroughs could implement charging systems today, and that the EPA (Environmental Protection Act) is less restrictive than is often thought. For the avoidance of remaining doubts, however, a change in the law to 'switch off' those clauses of the EPA which are deemed to make charging illegal would appear to be sufficient. The key issues then become political ones – who will implement charging schemes once the legal basis clearly exists?

### **Instrument #3 - Lower landfill tax for pre-treated waste**

Although this instrument would require intervention at the national level, it has the potential to be implemented relatively swiftly. The need for WDAs (waste disposal authorities) to comply with their obligations under the LATS is a concern for much of London, especially in the relatively short- to medium-term (2009/10 to 2012/13). Possibly the quickest approach to compliance is through low capital cost pre-treatment, potentially (in London) as an interim solution for subsequent adaptation.

The necessary infrastructure could be integrated within existing industrial facilities relatively easily, in both physical and planning terms. Currently, pre-treated waste, where it is landfilled, is taxed at the same level as untreated waste. The intention here would be to have a lower tax for pre-treated waste so as to reduce the overall costs of dealing with material through this route. On the basis of some conservative assumptions, we estimate that this measure has the potential to contribute to a reduction in London's landfill of up to 5.8 million tonnes.

### **Instrument #4 - Variable charging for specified premises**

The concept of variable charging for specified premises probably requires some enabling legislation (or favourable interpretation) from Government before it could be implemented across London. The concept here is to encourage the introduction of incentives for business and other premises to reduce and recycle their waste as opposed to disposing of it. However, recognising that such an approach relies upon differential charging (for use of recycling services as opposed to refuse collection services), a pre-requisite to successful implementation would be the widespread, or universal, presence of comprehensive collection systems.

This is likely to require a means to make mandatory the provision of collection services, to businesses and other premises, which include the recycling of a wide range of materials. Consequently, this is a policy which is effectively two policies in one:

- A mechanism to ensure that collection systems offered to businesses and other enterprises (schools, universities, hospitals, pubs, etc.) are comprehensive in terms of the number of materials being collected separately; and
- A requirement for differential charging to be introduced for waste collection services for households.

The analysis suggests that, possibly using bye-laws, or the potential offered by the London Councils Bill, or through Mayoral leadership, this option offers a useful and potentially highly effective way of having a rapid impact on waste management in the capital. These approaches would appear to require some favourable interpretation of existing law, or new areas in which by-laws could be introduced, to enable such an approach to be taken in the capital.

### **Instrument #5 - Producer responsibility with full financial responsibility**

Another mechanism with potential to be implemented swiftly, but which would also require (where schemes are already developed) a transition period (from one regime to another) is producer responsibility with full financial responsibility. This measure would be intended to give greater force to the 'polluter pays' principle and, if coupled with higher targets (in respect of packaging, for example), would encourage efforts to reduce the quantity of materials used, and encourage design of products / packaging to make them easier to recycle.

In the case of WEEE take-back and packaging collections, local authorities would be compensated directly for their actions in respect of collection and monitoring. Generally, the burden of meeting PR obligations would shift completely onto obligated entities (and consumers of their products) rather than falling to some degree on the generality of taxpayers irrespective of whether they purchase packaging, or electronic goods, or whatever else is subject to producer responsibility legislation.

The measure would, our research suggests, provide powerful additional impetus towards waste minimisation, and fairer and more sustainable waste management. In addition, especially in respect of packaging, we believe it would be very popular.

### **Instrument #6 - Residual waste levy**

In Wallonia (Belgium), the regional Government introduced a novel instrument in which the local authorities were subjected to a residual waste levy. In essence, the levy specified a quantity of residual waste per inhabitant which could be generated free of any levy. For those authorities whose generation of residual waste exceeded this 'quota', a levy on the excess was applied. The quota was reduced over time to encourage local authorities to reduce the residual waste generated. In Wallonia, this had the effect, amongst other things, of encouraging widespread dissemination of variable charging.

It is suggested here that there are two ways of doing this in London:

- By setting a pre-determined target and charging waste collection authorities who exceed the target level and refunding the revenue to those who fall below it. By using this approach of 'rebating revenue', those doing better are rewarded with the penalty revenue gained from those doing worse; or
- By setting the level against which rebates are paid at the *average* level of performance of the authorities. Those above would be charged a pre-determined levy, with the overall revenue refunded to those who are below the average level in proportion to how far below they are.

The success of the scheme in Wallonia suggests that this could be an effective mechanism for deployment in London (and, indeed, elsewhere). There are, clearly, some institutional issues (in terms of London Councils, the Mayor and so forth) that would need to be addressed; but our analysis suggests that such a scheme could make a significant positive contribution. Interestingly, the effects are likely to be more positive where the law clearly enables charging households on a variable basis. There is a degree of interdependency across these policies.

We estimate the current level of residual waste per household to be of the order 0.84 tonnes per household. Without charging in place, it ought to be possible for authorities to achieve a level of around 700kg/hhld. With charging in place, it might not be possible to maintain residual waste per household below 400kg/hhld (as happened in Flanders), but a level of 600kg/hld might be achievable in London.

The former rate would be expected to improve the city's balance of landfill allowances by 284,000 tonnes (no charging scenarios) or 489,000 tonnes in the 'with charging' scenario. It would be expected to increase recycling rates significantly, we estimate by between 10 and 20% under the 'without' and 'with' charging scenarios.

### **Instrument #7 - Tradeable allowances for landfill of commercial and industrial waste**

The introduction of tradable allowances for landfill of commercial and industrial wastes has the potential to have a considerable impact on the management of waste collected from within London. The concept involves progressively constraining the landfilling of London's waste (and particularly commercial and industrial (C&I) waste), whether the landfilling occurs inside or outside the Greater London region.

The aim would be to implement a measure which requires each tonne of waste collected in London that is destined for landfill to be 'covered' by a landfill allowance to be purchased by waste collectors. We envisage that this could operating using similar administrative infrastructure to existing waste transfer notes, and through the existing network of waste transfer stations.

Allowances would reduce in number each year and could either be distributed among collection companies (a grandfathering approach), auctioned, or make use of a combined approach. A key problem is that neither the GLA Act nor the proposed amendments appear to give the Mayor the power to establish a trading scheme of the kind described. Whilst, in principle, a voluntary scheme could be initiated by the Mayor, the mechanism would need to be based upon allowances having some legal status, since an allowance scheme without mechanisms for applying sanctions may not work (due to the problem of free riders).

## Instrument Overview

Instrument	Wastes Affected	London Only Policy?	Speed of Implementation and Roll-out	Likely Impact
Carbon Credits	All materials / wastes	Unlikely without significant financial resources	Requires further consideration	Very significant over longer term (prevention and recycling)
Incentives / Mandates for Households	Household waste	Possibly	Quick for e.g. compulsory recycling / incentives. Slower for charging (politics)	Highest for charging schemes, impact on recycling from compulsory recycling, incentives effect less clear (in terms of benefit v cost)
Higher Landfill Tax with Lower Tax for Pre-treated Residue	Residual Biodegradable Municipal Waste	No	Quick to implement – some impact immediate but time lags for full effect	Significant medium-term impact in UK and London – Impact reduced if delayed
Variable Charging for Premises	All	No / Possibly	Could be implemented swiftly but transition period would be required	Significant impact on management of commercial (and industrial) wastes (in London)
Producer Responsibility with Full Financial Responsibility	All producer responsibility wastes	No	Ought to be possible to implement (and instigate transition) swiftly. Full implementation over medium term	Significant for those wastes covered (both recycling and prevention)
Residual Waste Levy	Household / municipal waste	Possibly	Would need mechanism for agreement across partners or national policy (so likely to take time). Once in place, effects could follow swiftly	Impacts likely to be affected by how authorities see possibilities for variable charging. Higher if law allows / is perceived to allow implementation of charging schemes for households
Tradable Landfill permits for Collectors	All wastes collected in London	Yes	Unclear – potentially short-term – measure would need to be phased in over a period of several years	Considerable impact on management of wastes collected in London (and waste collection systems)

## **The Big Picture**

In conclusion, it seems that three over-arching issues cut across these possible mechanisms for more rapidly and effectively tackling our waste challenges:

### **Institutional Issues**

The history of waste management, and the way it is perceived, combine with the present policy hiatus to deliver an over-complicated and ineffective institutional set-up. To progress towards a world-class system for dealing with our waste, institutional arrangements – which include not just the distribution of local and national government responsibilities, but improvements in both legislative and regulatory frameworks – must be simplified, clarified and made more robust. Stakeholders at various levels need to take genuine ownership of the challenge, not simply react to successive waves of European legislation.

### **Resources & Infrastructure**

Continuing to develop a waste management system that relies on an outdated conceptualisation of “waste” runs the risk of locking us into a pattern of behaviour unfit for the twenty first century. The demands of sustainable development, in the broadest sense, and climate change in particular, require us to re-think “waste” as “resource”, and this needs to start now. If the projections are to be believed, simply staggering amounts of waste management infrastructure will be built over the next ten years, and it will need to last for decades. It is essential that this infrastructure is built on 21<sup>st</sup> century principles, not 19<sup>th</sup> century principles.

### **Integration**

Waste is an integral feature of modern life, yet too often both individuals and organisations “look away”. This cannot continue. In a “resource economy” that is able to play its part in reducing our carbon emissions, closed-loop production, localised recycling and re-processing, waste minimisation strategies that are integrated into urban design, high quality facilities that are well designed and operated, community composting and many other similar strategies will need to become normal. Resource management will need to be embedded within Local Area Agreements, Multi-Area Agreements, Community Strategies and other, related mechanisms.

We have come a long way in the past 10 years, and London Waste Action has played an important part in the journey. We suggest that the economic measures we have discussed, and the over-arching issues outlined above, offer the means by which, over the next ten years, we can move to a position in which we can be genuinely proud of how we run our resource economy.