

THE WASTE OF NATIONS

by

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"Public services are never better performed than when their reward comes only in consequence of their being performed, and is proportioned to the diligence employed in performing them."

Adam Smith, The Wealth of Nations, Book V, Chapter 1, Part Two

Executive Summary

- There is a consensus that we need to recycle more of our waste. The UK government and the EU are committed to achieving this, but progress is patchy. The UK, in particular, is lagging behind, often referred to as the, 'dustbin of Europe'.
- This consensus is well founded. Waste, surprisingly enough, is uneconomic. Recycling allows us to get value from things we would otherwise bury in the ground. The environmental benefits are persuasive too: increased recycling reduces the need for unpopular landfill sites and incinerators, and can prompt emissions savings of many millions of tonnes per year.
- The evidence from around the world is clear: the best way to increase recycling is to introduce pay-as-you-throw (PAYT) waste charges. A study of 7100 such schemes in the USA found an average 16–17% reduction in landfill, a 50% increase in recycling, with a source reduction in waste of around 16%. The UK is unique in prohibiting PAYT.
- However, PAYT must not be used as a 'dustbin stealth tax'. It must be accompanied by a corresponding fall in local tax rates. Furthermore, there is no reason why PAYT should be more expensive than a tax-funded system. Where PAYT is used in Holland and Ireland, it has not increased household bills. In Germany it has led to savings.
- Studies do not show any link between PAYT and fly-tipping. Indeed, by giving the consumer more power, a liberalized system of waste management could actually reduce fly-tipping.
- PAYT would encourage much greater consumer-led environmentalism. Knowing that they will pay for waste disposal, consumers will demand less unnecessary packaging and more recyclable materials from producers and retailers. Consumer led environmentalism is much more effective than government regulation. Put simply, shoppers mean more to businesses than legislators, because shoppers mean profits.
- To get the best results, the introduction of PAYT must be accompanied by the full liberalization of the refuse collection sector. Private companies should compete for customers. This would keep prices down and lead to greater customer satisfaction. The Irish experience indicates that it would also spark much greater innovation and specialization and prompt refuse collectors to compete on how much waste they recycled.
- If we really want to encourage recycling, we must abandon the 'proximity principle', which says that waste is a local problem and

should be dealt with locally. Instead, recycling should be put on a commercial footing. We must allow recycling facilities and providers to merge and consolidate, and allow the free movement of recycled goods. This would allow economies of scale to be established and bring down the cost of recycled goods — making them more commercially viable in the long run. Ultimately, the best way to encourage recycling is to aim for an international free trade in recyclables.

- This report proposes that the UK government and devolved bodies should: introduce pay-as-you-throw waste charges; establish a fully liberalized competitive market in refuse collection; establish a universal service guarantee for waste collection; and expand the remit of the Office of Fair Trading to include refuse collection and recycling.
- This report also recommends that the European Commission should re-grade all forms of household waste as non-hazardous for shipments within the EU, and declassify scrap metals and dry recyclables as waste, treating them as raw materials for the purposes of waste legislation.

1. Introduction

The EU is committed to increasing recycling, with targets for member states and legislation that signal its intent to meet the challenge of waste head-on.

Yet progress is patchy. In particular, the UK has long been the “dustbin of Europe”. It is playing catch-up with the rest of the Continent.

The UK risks missing its EU waste diversion targets, and the clamour has grown over the last decade to wean it off its wasteful ways. The concepts of the, “zero waste society” and of the, “closed loop” where resources are re-used and products designed for recovery were considered idealist until quite recently: now, they are political orthodoxy. There is a consensus that the UK needs to start recycling more.

To do this, various methods have been proposed and implemented. Landfills are already subject to taxes, set to escalate every year, and the Landfill Allowance Trading Scheme is reducing input. Types of producer responsibility have been mooted, such as small levies to pay for end-of-life disposal. Taxes or outright bans of products that are hard to recycle have been discussed, to encourage designers to factor in environmental sustainability. Meanwhile, time has been devoted to showing that the green economy could be a major earner for the UK.

This rising chorus for a re-think on waste has increasingly focussed how to encourage households to recycle. Again, lots of schemes have been debated and discussed. The Government has proposed a rewards-based recycling scheme for householders; councils have started providing a variety of colours and sizes of boxes to make recycling easier. Various prize-driven programmes are under trial, whilst local newspaper letters pages debate the various merits of bottle banks and reduced collections.

Pay-as-you-throw (PAYT) is one such scheme designed to stimulate recycling. It is known by a variety of names — variable charging, direct charging, unit pricing, save-as-you-throw — but the idea is the same. With these programmes, individual households pay for their waste collection according to the amount of waste they produce. The more they recycle, the less they pay.

The systems are commonplace in Europe and America, and the UK is entirely unique in explicitly prohibiting local authorities charging for their waste. This means there is a mass of first-hand evidence to learn from, so that potential downfalls can be avoided and best practice replicated. Yet PAYT has had a tumultuous reception in the UK, with varying media coverage and public hostility. After initial support from the Government, it is less than clear that the scheme will be implemented.

The purpose of this report is to examine PAYT as one way to bring about a UK that recycles. It will argue that PAYT is the single most effective change that can be made to household recycling — and that it can be used to stimulate wider changes in product design and producer responsibility.

For PAYT to fully reach its potential, the UK needs to move from the existing model of contracting-out, which will not deliver the innovation needed to meet the challenge. The UK should combine PAYT waste disposal with a fully liberalized, competitive system of waste management. This has not yet been explored in public debate.

The debate over PAYT and waste management will not stop with this paper. It will continue to be controversial for some time. Still, this paper will attempt to comprehensively dismiss the fears and scaremongering that has been a commonplace feature of media coverage of PAYT.

There is a lot that the EU, the UK government, and devolved bodies can do to bring about such a re-alignment of waste management. There is much at stake, and no time to waste.

2. Why recycle?

It sounds like an obvious question, but even if there is a consensus amongst environmental circles, there are dissenting voices that question the value of recycling. It is worth recalling exactly why recycling is necessary, before exploring how to improve it.

Objections to recycling can be categorised into two broad categories. Firstly, the circumstantial objections: that recycling costs households time; that it is an excuse to raise taxes; or that it costs too much. Secondly, there are the more considered arguments that recycling is not actually environmentally friendly.

Concerns voiced that the time taken by households to sort their material were a waste of valuable energy and time are understandable. Having to separate waste into ever-increasing numbers of bins would indeed be a hassle — but this is not where recycling is going. With modern sorting technology, there is no need to separate out paper from metals or plastics. New recycling schemes tend to use “co-mingled” waste streams, so a householder needs to only put out one recycling bin, rather than a host of them. The bulk of the sorting effort has been moved from households to processors.

As for recycling as an excuse to raise taxes, recycling generally costs less than simple disposal of waste, because recyclables have a value.

Indeed, the idea that recycling is a financial burden belies its basic nature: culling value from materials that would otherwise go to waste. Waste, surprisingly enough, is a waste. Consumers waste £424 a year on uneaten food¹; wasted natural resources cost 7% of profit to UK manufacturing². It is a central tenet of this report that innovation in recycling can come without excessive costs to householders or nations, and that it is possible to establish recycled goods as a permanently cheaper alternative to those sourced from virgin materials.

The environmental objections are more varied, and require more considered answers.

One concern is that modern landfills and incinerators are strictly regulated, and as such are “clean”. It is also often pointed out that landfill space is not actually running out in the UK.

However, local opposition to landfills and incinerators — often dismissed as “nimbyism” — is a real obstacle, and not one that should be ignored. More importantly, the science of incinerators gives unclear messages over health impacts, and whatever material has been incinerated almost always has leftover waste. Landfills contribute to methane emissions, and even with strict regulation there are concerns about environmental risks.

¹ Prudential, *Soggy Lettuce Report 2004*, (London, Prudential, 2004)

² IPPR, *A Zero Waste UK*, (Institute for Public Policy Research and Green Alliance, 2006) p.10

Supporting landfills and incineration are somewhat beside the point, because the core function of recycling — which landfill can never do — is to save resources. This has received criticisms too, from critics who argue that it takes more energy to reprocess materials than to take them from virgin sources.

A lot of detailed study has gone into this issue. Probably the most detailed was conducted by Waste and Resources Action Programme (WRAP), a non-profit company, which did comprehensive life-cycle analyses of 55 common goods in 200 different life-cycle scenarios. 83% of the time, recycling was better for the environment. This means carbon emission savings of 10–15 million tonnes a year.³

In addition to energy saving, it saves natural resources too. Recycling means that products use recovered materials, rather than sourcing them from finite virgin materials.

This links back to the question of the costs of recycling. Advocates of recycling may focus on its role in reducing the *environmental* costs of consumption, but it goes hand in hand with cutting the *economic* costs of consumption too.

There is, in other words, no conflict between good economic stewardship and good environmental stewardship.

³ <http://www.wrap.org.uk>

3. The mechanics of pay-as-you-throw

Pay-as-you-throw (PAYT) systems are very varied. They change in scope and nuance from country to country. Still, there are broad categories which are useful in grasping the basics. Firstly, the different types of billing system; the main ones being⁴:

Bin system: Customers choose in advance what size of bin they want for their refuse. The refuse company will provide a number of options, and the charge will increase with the size of the container. Charging can be either in advance, or with a variety of timeframes as a monthly, weekly or annual bill.

Bag system: This is the simplest form of PAYT, but it also involves more coordination in its implementation. Customers buy a roll of bags in advance from local shops, sometimes with a small percentage commission for the retailer. The bags have special logos or are a different colour to identify them to the collector. Buying the bag tends to be the only cost and this purchase covers all collection costs. There are some disadvantages; most notably that in urban areas with domestic animals or foxes, the bags might be torn into. Bags can also be overstuffed.

Tag system: Rather than the special bags of the bag systems, this system uses identifying tags. As with bags, they are purchased in advance and they cover all costs. The key draw is the simplicity of distribution. Tags can be bought at local retailers, purchased from a central location — or even posted to householders. The key drawbacks are that depending on the design, tags can be easy to steal, or might fall off easily too.

Weight-based system: This type of system used to be quite rare, because it is quite technology-intensive. Under this method, collection vehicles and bins have a co-ordinated system to weigh the bins. Usually, this involves an identifying chip on the bin which is scanned or read when the bin is lifted. The vehicle has weighing technology, which records how much this particular household is throwing out. Customers are then billed according to the amount they throw.

The disadvantage of weight-based lifting is that it is heavily reliant on technology. But as Andresen points out, regular accuracy checks for scales, as well as well-trained haulers, means the high-tech option is viable. Indeed, it allows households to be charged extremely accurately — by exactly how much they throw, rather than a looser volume of bin or can. It means they can make a week-on-week change as well — and weight charging also matches the costs of waste management more closely than volume.⁵ Skumatz *et al* also

⁴ These categories based largely on Lisa A Skumatz, *Variable rate or "Pay-as-you-throw" Waste Management: Answers to frequently asked questions*, (Los Angeles: Reason Public Policy Institute, July 2002)

⁵ Katya Andresen, "Communities Weigh Merits of Variable Rates: Residents' Fees for Garbage Disposals", *World Wastes*, November, 1992

argue that though there may be a high initial outlay, this might mean greater savings in the long-term.⁶ Their accuracy and efficiency can only improve with time; as weight-based systems become more common in the USA, a wider body of evidence will be available for studying these programmes.

Hybrid systems: These systems have tended to evolve as PAYT is implemented, using existing infrastructure and pricing systems. There is usually a basic level of service that is paid for with a flat fee. This fee, and the amount of waste collected, is low enough that it does not desensitize householders to the need to recycle. Any extra waste collected on top of this is charged using bins or tags. In effect, it is often a compromise for communities that want to introduce PAYT, but wish to do so without significant upheaval and large changes in existing provisions.

In practice, most PAYT communities do use some form of hybrid scheme, tailoring the system to local conditions and needs, and often avoiding high start-up costs. This should change as newer technologies, such as barcodes or “chip and bin” become more affordable. They can only serve to streamline the operations of waste management even further.

The overall aim is clear: to reduce waste and increase recycling. Other factors are important too — most obviously, the cost to households and communities. These considerations will, of course vary from place to place, but they deserve some attention.

The impact on waste diversion: does it increase recycling?

The USA and parts of Europe have had PAYT schemes in operation since the early 1990s. In the USA, 30 of the largest 100 cities, and 25% of the population have PAYT⁷, a mass of studies and surveys have attempted to quantify the impact these schemes had.

It seems clear there is an increase in recycling. Seattle, Washington has one of the oldest — and most famous — PAYT schemes. Since its introduction, the amount of waste that is recycled has increased 60%.⁸ 80% of the city population now participates in recycling schemes.⁹ One survey of 16 PAYT communities found much higher-than average recycling rates — up to 25% more than state averages.¹⁰ Another, focusing on the state of Illinois, found that PAYT communities recycled more and threw out less. With a state average of 18% recycling, towns with variable rates achieved recycling rates of 28–31%.¹¹ A 1993 study surveyed managers responsible for waste

⁶ Lisa A Skumatz, Hans Van Dusen, & Jennie Carton, "Garbage By The Pound: Ready to Roll with Weight Based Fees", *Biocycle*, November 1994

⁷ Lisa A Skumatz, & David Freeman, *PAYT in the US: 2006 Update and Analyses* (Superior, CO: US EPA and Skumatz Economic Research Associates (SERA), 2006

⁸ "Seattle Engineers Say: Variable Can Rate Encourages Recycling", *Waste Age*, November 1985

⁹ Robert Kourik, "What's So Great About Seattle?" *Garbage*, November 1990

¹⁰ Tony M Guerrieri, *An Assessment of Unit Pricing for Municipal Solid Waste. A Report for the Pennsylvania Joint Legislative Air and Water Pollution Control and Conservation Committee*. September, 1994

¹¹ Patrick Moriarty, "Financing Waste Collection for Maximum Diversion", *Biocycle*, January 1994

management, asking what impact PAYT had. The local recycling coordinators were unequivocal that variable rates were the most effective strategy to stimulate recycling: 1000 of them gave PAYT 3.83 on a 1–5 scale of the efficacy of strategies.¹²

Research into increases in tonnages recycled reveal significant rises. One town in New Jersey increased its recycling tonnage by 83% after it implemented PAYT.¹³ A wide-ranging survey of 21 PAYT cities found that recycling increased, on average, 126% — with the highest increase being 456%.¹⁴ Similarly drastic changes in recycling were reported in Portland after the introduction of variable charging, with an increase of 349%.¹⁵

As well as these city and municipality-level studies, some looked at the impact of PAYT on individual households. 75 households were surveyed in 1994 as they entered a pilot project for PAYT. The amount they personally recycled increased, on average, by 15%.¹⁶ Of 3,040 householders surveyed in the state of New York, a majority said that they recycled more because of the introduction of PAYT.¹⁷

The flip side of increased recycling is decreased waste to landfill. Flanders reduced its waste 40–50kg per inhabitant with a bag system — about 10% of waste per individual.¹⁸ The Belgian municipality of Dilbeek reduced its residual waste by 60% in only 6 months.¹⁹ Again, Seattle is the best-known American example — it reduced its waste to landfill by 24%.²⁰ One Illinois community reduced its landfill stream by over half²¹ — mirroring the success of two communities in New Hampshire.²² One attempt to average the amount of waste reduced placed the average at 28%, with a range of 25% to 50%.²³ Torrelles de Llorbregat experienced a 38% fall in residual waste after introducing variable charges. Landkreis Schweinfurt in Germany had a 46% drop in residual waste.²⁴ A 12% drop in waste output was experienced by Treviso in Italy.²⁵

¹² Renu Khator & John Huffman, “A Survey of Recycling Coordinators”, *Biocycle*, October 1993

¹³ “New Jersey Town Weighs in on Trash by the Pound: Mendham, New Jersey”, *World Wastes*, February 1993

¹⁴ Marie Lynn Miranda, Jess W Everett, Daniel Blume, & Barbeau A Roy Jr. “Market-Based Incentives and Residential Municipal Solid Waste”, *Journal of Policy Analysis and Management*, Vol. 13, No. 4, 1994

¹⁵ Richard Cuthbert, “Variable Disposal Fee Impact”, *Biocycle*, May, 1994

¹⁶ Don Fullerton & Thomas Kinnaman, *Household Demand for Garbage and Recycling Collection with the Start of a Price per Bag*, National Bureau of Economic Research working paper 4670. March, 1994

¹⁷ Sarah Stone & Ellen Harrison “Residents Favor User Fees”, *Biocycle*, August, 1991

¹⁸ OVAM, *The Effect of Household Waste Taxes and Retributions on the Amount of Household Waste Offered*, February 1999

¹⁹ Oko Institut *et al* *Waste Prevention and Minimisation, Final Report to DGXI, European Commission*, 29 July 1999

²⁰ Lisa A Skumatz, “The Buck is Mightier Than The Can”, *Biocycle*, January, 1990

²¹ Barbara Adamec, “Volume-Based Collection Fees: A Success Story”, *Resource Recycling*, March, 1991

²² Jeffrey Hayes, “Let the Market Replace the Madness: How to Control Rising Solid Waste”, *Public Works*, December 1992

²³ Jim Alderden, “Volume-Based Rates, Dream or Nightmare?” *Recycling Today*, November 1990

²⁴ Eunomia Research & Consulting for OECD, *Impacts of Unit-based waste collection charges* May 2006, <http://www.oecd.org/dataoecd/51/28/36707069.pdf>

²⁵ Department for Food, Environment and Rural Affairs, *Waste Strategy for England 2007*, <http://www.defra.gov.uk/environment/waste/strategy/index.htm>

For the sake of intellectual honesty, it must be acknowledged that there are a few dissenting voices. Savas *et al* surveyed citizens living with a variety of collection systems, and found that there was little effect on the amount of waste generated, or drop in service requested.²⁶ Yet studies like this are fighting against a mass of evidence. Taking a balanced view, it is clear there is overwhelming first-hand empirical evidence that PAYT increases recycling, and decreases waste to landfill.

One key point with these studies is that the results are all positive, but vary in degree. This is partly because recycling take-up varies significantly with the availability of easy recycling facilities. The greater the provision of recycling facilities: the higher the increase in recycling. Fee structures play their part too: hybrid schemes that have a base fee tend to have slightly lower rates than entirely variable schemes, because the flat rates dampen the incentive to recycle more. For most communities, however, increasing recycling has to be balanced against the real concerns of revenue stability and cost.

The most comprehensive surveys of PAYT are those conducted by Skumatz Economic Research Associates, often in conjunction with the Environmental Protection Agency. These probably provide the most measured and balanced statistics for analysis of waste diversion. They find — looking at the 7,100 PAYT schemes in the USA — that a reduction of waste to landfill, in the order of 16–17%, is typical. Recycling increases, on average, 50%.²⁷

Still, PAYT clearly has to be nuanced for it to work — and there are significant issues that need to be worked around.

Does PAYT mean source reduction?

Source reduction is the ideal way to reduce waste. It is at the top of the waste hierarchy, the commonly accepted ranking of waste treatment options that places reduction, re-use and recycling above energy from waste and disposal.

It is noteworthy then, that there is little consensus over whether PAYT stimulates source reduction. One school of thought says that recycling and reduction are complimentary, and that families being charged for waste will seek to do both. On the other hand, some contend that families will feel they are already doing enough by source reduction *or* recycling. Securing an answer is made more difficult by the fact that few studies look specifically at source reduction.

On balance though, it seems more likely that families will seek to both bring less extraneous waste into the household, as well as seek to recycle more of what is left. Some studies point out that the level of waste reduction can only be accounted for by some source reduction. Miranda *et al*, for example, argue that even taking into account more recycling, illegal disposal and a margin of

²⁶ Savas, E.S.; Baumol, Daniel; & Wells, William, “Financing Solid Waste Collection”, *The Organization and Efficiency of Solid Waste Collection*, (Lanham: Lexington Books, 1977)

²⁷ Lisa A Skumatz, *Maps and graphs on PAYT/VR*, 2001, <http://www.serainc.com>; Lisa A Skumatz, *Nationwide diversion rate study – quantitative effects of program choices on recycling and green waste diversion: Beyond case studies*. (Seattle: SERA, 1996); Skumatz & Freeman *PAYT in the US: 2006 Update and Analyses*

error, there is still missing waste unaccounted for — and that can only be source reduction.²⁸ Skumatz agrees, summarising that:

Each town implementing variable-rate programmes can expect to see reductions in tons disposed on the order of 16%, with one-third going to increased recycling, one-third to increased yard waste diversion, and about one-third being avoided entirely through source reduction.²⁹

Administrative burdens

For local authorities with strict budgets, changing their waste management systems will never be desirable if it means an increase in staff numbers, paperwork and bureaucracy. It is a common criticism of PAYT that all it will serve to do is burden the responsible authorities.

This concern is understandable — but in practice, it seems unwarranted. The schemes take planning to set up, but once they are up and running, require little management. They are also quite quick to implement: one community introduced PAYT in just 3 months.³⁰ The amount of continual administration will vary according to type of scheme as well. Bag and tag programmes will require a minimal amount of overseeing, to ensure that local retailers receive the bags or tags. The initial investment in weight programmes requires time and money, but is really self-running. Given that almost all councils outsource their waste management, it is likely that the private companies will soak up any additional administration costs, and work out efficiencies. Fears over increased admin and paperwork should not put policymakers off PAYT.

Costs to households

A key danger with PAYT is its potential to be depicted as a stealth tax, masquerading as an eco-friendly measure. But most programmes are entirely revenue neutral — in that they do not increase the financial burden on households. All proposals for PAYT in the UK have followed this pattern, despite hyperbolic media coverage screaming, “dustbin tax”. PAYT will happen in the UK only if it does not increase costs for ordinary people.

According to the Local Government Association (LGA), the average household in the UK pays about £125 per annum for their waste disposal.³¹ In Ireland, PAYT costs almost exactly the same — Thorntons Recycling, for example, charge between €135 and €219 per annum.³² Charges can be as low as €123 (£73) per annum.³³ The LGA points out that in Haarlemmermeer, near Amsterdam, charges can be as low as €142 — about £100.³⁴ One study said that PAYT in Germany has seen slim savings for households.³⁵

²⁸ Miranda *et al*, “Market-based incentives”

²⁹ Skumatz, *Variable rate or “Pay-as-you-throw”*, p.13

³⁰ *Ibid.* p.1

³¹ <http://www.lga.gov.uk/PressRelease.asp?id=-A7847470>

³² Personal communication from Thorntons Recycling, 7th September 2007

³³ SLR Consulting Ltd for CIWM, *Delivering key waste management infrastructure: Lessons learned from Europe*, November 2005, p.30

³⁴ <http://www.lga.gov.uk/PressRelease.asp?id=-A7847470>

³⁵ Eunomia Research & Consulting Ltd for OECD, *Impacts of Unit-based Waste Collection Charges*, May 2006. <http://www.ciwm.co.uk/mediastore/FILES/12134.pdf>

The same study also did an analysis of the external benefits — in other words, above and beyond the household charge, the value of reduced emissions by increased recycling. It found net gains of €11–20 per household in Spain and €8–14 in Germany. It serves as a reminder that financial gain and environmental gain are linked.

Moreover, the point is that PAYT gives households the power to set their own waste budget. With a flat fee, buried in council tax, families and individuals had no control over the costs of their own waste. PAYT places that control firmly in their hands. For this to work and politically acceptable, PAYT must, of course, be accompanied by a corresponding fall in local taxes.

Fly-tipping

Illegal disposal of waste is the most common objection to charging for waste. It is founded upon the concern that if charging gives people incentives to not throw waste out the resultant diversion will be into fly-tipping, not recycling.

Most studies of fly-tipping agree that data on fly-tipping is extremely hard to come by, and that anecdotal evidence on its relationship with PAYT is only gathered *after* the implementation of the new scheme.³⁶ The suggestion is people only worry about fly-tipping once a scheme that might cause fly-tipping is introduced.

What evidence there is, however, suggests that these fears are, on the whole, unfounded. A focussed study on 8 communities in America found only 1 with notable problems — and they suggested this was dumping from neighbouring non-PAYT areas.³⁷ A study of 100 communities came to the conclusion that fears about illegal dumping before the introduction of waste charges were not realised, and where problems were reported it was as a temporary problem.³⁸ Another, by the same author, provided evidence of 368 communities in America that had implemented PAYT. Just under a third reported, “some dumping problems” — and:

Dumping increased only in the short term and dropped off as customers got acquainted with the new program or enforcement measures were pursued.³⁹

Another key variable for reducing fly-tipping with PAYT is the charges themselves. The fear that citizens will fly-tip rather than recycle is only valid if the fees are exorbitantly high. Such fees are extremely unlikely. In fact, there is a happy medium with PAYT rates. Too low, and they do not encourage diversion; too high, and that diversion will be to illicit means of disposal. Existing schemes have not struggled to find this balance.

³⁶ *Ibid.* p.29: “the question as to how much waste is illegally dumped, and what the social costs of that dumping are, remains something of a mystery.”

³⁷ Lynn Scarlett, *Mandates or Incentives? Comparing Packaging Regulations with User Fees for Trash Collection*, (Los Angeles: Reason Public Policy Institute, May 1993)

³⁸ Lisa A Skumatz, *Variable rates for Municipal solid waste: Implementation, Experience, Economics, and Legislation*, (Los Angeles: Reason Public Policy Institute, June 1993)

³⁹ Lisa Skumatz, Hans Van Dusen & Jennie Carton, *Illegal Dumping: Incidence, drivers, and strategies* (Superior, CO: SERA, 2001) p.4

In an attempt to provide waste managers with practical assistance, The Jill Dando Institute of Crime Science produced a best practice guide that looks at a raft of measures.⁴⁰ They emphasised the need to see the problem in the wider context of waste management, arguing that preventing fly-tipping begins with ensuring adequate disposal facilities. As PAYT is predicated on the collection of household waste, this is largely taken care of. It is the illegal dumping of bulky goods that is a trickier problem – so making sure there are good facilities and easy collections should be a priority. It is, of course, worth noting that the illegal dumping of these goods is unconnected whatsoever to PAYT for household wastes. Indeed, increased fears over dumping might actually mean better provision for tackling dumped bulky goods — so PAYT could even *reduce* the impact of fly-tipping.

Moreover, the UK is well placed to monitor and control illegal fly-tipping. Local authorities are required to submit fly-tipping data to the Department for Environment, Food and Rural Affairs (DEFRA). They have, since 2004, been building up the Flycatcher database using this data.⁴¹ Though it shows an already serious problem — some 89,173 incidents at a cost of £50 million to clear up — it is an invaluable information source from which to begin tackling illegal dumping. Under the Antisocial Behaviour Act 2003, local authorities (in the presence of at least one police constable) can stop and search vehicles suspected of fly-tipping. Together with the Environment Agency, which deals with more serious dumping crimes, a “hot-list” of fly-tipping vehicles is maintained. The Clean Neighbourhoods and Environment Act 2005 allowed more flexible penalties and sentencing — and DEFRA suggests that magistrates, newly aware of the true costs, are taking fly-tipping seriously.

Finally, comparing DEFRA information with another survey of dumping in the UK, the Local Environmental Quality Survey of England (LEQSE), is instructive. LEQSE uses first-hand observation to measure the cleanliness of the streets, and reports a significantly lower level of fly-tipping than results from Flycatcher. This suggests that there are already effective mechanisms for clearing up illegally dumped waste.

Related to fly-tipping is the issue of anti-social neighbours, and the fear that neighbours will put their rubbish in someone else’s bin. Aside from the obvious solution — a lock — again, in practice, this tends not to be a problem. Recycling is actually quite popular, and PAYT can even foster a sense of civic pride. There is also the threat of anti-social legislation. As one Irish waste operator working with PAYT says, “90% of bins reported stolen have inadvertently been misplaced after collection.”⁴² Some systems, such as tags and bags, avoid this problem entirely due to their pre-paid nature.

The introduction of PAYT does not have to mean fly-tipping skyrockets. As long as careful steps are taken, there is no reason to think they make PAYT unattractive, especially given DEFRA’s proactive stance on the issue.

⁴⁰ “Understanding and Preventing fly-tipping: A Summary guide to good practice.” Jill Dando Institute of Crime Science, UCL, London 2006, <http://www.defra.gov.uk/environment/localenv/flytipping/pdf/flytipping-causes.pdf>

⁴¹ <http://www.defra.gov.uk/environment/localenv/flytipping/flycapture.htm>

⁴² <http://www.mrbins.com/menu.asp?menu=15&parent=13>

Houses of multiple occupancy

Houses of Multiple Occupancy (HMOs), in tenements or blocks of flats, provide a potential stumbling block for PAYT, and have always been the most awkward citizens to deal with. A regular way of getting around this is to charge a variable rate to the landlord. This puts the onus on the property owner to keep waste costs down, and means it is likely that they in turn will pass on incentives for reducing waste to tenants.

Even easier is the use of bag or tag programmes. Their pre-paid nature means that they could quite easily be placed for collection in communal containers. This system works well in cities such as Maastricht in the Netherlands, which has a high proportion of apartment buildings.

Newer technology is also providing new ways to deal with HMOs. Buildings that have combined rubbish chutes are becoming more common in the USA. New hardware lets tenants push a button for the type of waste they are putting in the chute, and the chute is then automatically directed to the relevant collection bin. Either the frequency of use, or weight of use, are simple to measure. Although buildings with such chutes are more common in Europe and the USA than in the UK, the system could still work. It has a high initial outlay, but also has the huge benefit of making recycling exceptionally easy — about as easy as it gets. There are already around 200 of these systems in the USA, and their evolution and development will make it easier for large buildings and HMOs to be included in pay-as-you-throw.

Large families

Some have argued that large families should be exempted from PAYT, or offered some form of remedial support. Yet this does not stand up to much scrutiny. For a start, the entire basis of PAYT is that less waste is rewarded. Large families should not be excluded from this incentive. Nobody suggests that large families should pay a flat rate for gas, electricity or water bills — and it is also a moot point that with the current charging system, small families are effectively subsidising large ones.

Low-income households

The key point as regards low-income households is that PAYT does not add to the financial burden: it represents an opportunity to reduce it. If the schemes are revenue-neutral, then low-income households are empowered with the ability to reduce their bills, by recycling and source reduction.

Still, some communities in the USA have implemented rebates for low-income groups, and it is likely calls for such programmes will be heard when implementing PAYT in the UK. This may well be encouraged by the belief that low-income areas are more likely to engage in illegal dumping — despite DEFRA evidence there is only a tenuous relationship between deprivation and fly-tipping, which may not be causal.⁴³

⁴³ <http://www.defra.gov.uk/environment/localenv/flytipping/index.htm>

The major problem is assessing who is eligible for a rebate. A new means–test or certification process, set up as a stand–alone method for waste management alone, would be extremely expensive to administer. It would be better to piggyback on existing rebates, whether that be tax credits or other allowances. Doubts must be raised over the efficiency of such schemes.

It is possible to adapt some of programmes to suit lower–income families. With a tag programme, for example, a special tag could allow a household to put out more rubbish. However, research suggests that this has the effect of creating a black market in waste tags, as well as the possibility of social stigma associated with the tags.⁴⁴ For a bin or hybrid systems, the final bill could have a discount for certified households, or the base charge for the service could be reduced or waived.

The simplest method might be with a bag system. Discounts could be given on presentation of some form of certification at point of sale; or, bags could be simply posted or delivered to registered addresses. This does mean that those who pay fully are subsidizing the discounted bags, so the discount requires caution in determining eligibility. Bag programs, because of their pre–paid nature, might be more suited to lower income areas anyway. Retrospective bills might cause financial planning problems: in Ireland, without any legislation to enforce payment, operators have encountered difficulties with this.⁴⁵

For all these reasons, there are relatively few communities that offer discounts or rebates. Skumatz documents four case studies. Seattle, the largest community studied, gives a 60% discount on the smallest can size for elderly, handicapped and low–income families, with a 27% discount on larger cans. This maintains the incentive to recycle, but does give some leeway to poorer households. This system is well–maintained, and has been in operation since the 1980s. In San Jose, California, 3.3% of customers get roughly a third off; in Wilmington, North Carolina, eligible citizens get a 40–60% rebate; whilst in Tompkins County, New York, any citizen that can prove receipt of social service relief is entitled to a service discount. Only 10% of American pay–as–you–throw schemes have any sort of discount for some customers, and mostly these are directed at the elderly and infirm: citizens who deserve special treatment under any waste management programme.⁴⁶

On balance, compensations for low–income households should not be unconditionally supported. The flexibility of PAYT means they can be incorporated, but they must be carefully thought through if they are not to be over–complex and unfair.

The final note, however, must be that if PAYT is revenue neutral, with appropriate deductions from council tax, then there will be opportunities to reduce household budgets. This is crucial, because it means that far from penalizing the poorest, it empowers them in a way current waste pricing cannot.

⁴⁴ Breckinridge *et al*, *Unit Pricing Systems: Unit Pricing for Solid Waste* (Sacramento, CA: California Integrated Waste Management Board, 1993) p.15

⁴⁵ Eunomia for CIWM *Waste Collection: To charge or not to charge? A summary report to IWM (EB)*, p.17. <http://www.ciwm.co.uk/iwm-eb>

⁴⁶ Lisa A Skumatz, *How can low income programs work? Addressing special population under pay as you throw/variable rates systems*, (Superior, CO: SERA, 2001)

PAYT: the way to go

PAYT raises tempers. It is easy to dismiss as a stealth tax on households. It is easy to claim it will lead to unprecedented fly-tipping. It is easy to say it is unworkable and will penalize the poor.

Europe and the USA prove that these fears will not be realized by PAYT. They provide hard evidence that PAYT works. The costs are manageable, and there is a consensus that a commensurate cut in council tax should ensue. The real beauty of the scheme is that costs are not static, but decrease for householders — including the poor — as recycling increases. Fly-tipping is a problem under flat rates, which means the UK already has a good infrastructure to tackle it. Waste charges will not cause mass illegal dumping.

In other words, the potential negative side-effects are negligible, and easily overcome. The central positive benefit — greater recycling — is plain to see. The UK is not marching into the unknown by debating PAYT: it can observe and learn from mature schemes.

When this is grasped, the dogged peculiarity of the UK being the only nation in Europe to ban waste charges can be fully appreciated.

4. The whole package: the wider implications of PAYT

PAYT needs to be set into a wider context of waste management. Packaging is one area that has received particular attention, and much time and energy has been spent discussing producer responsibility and waste. Supermarkets and retailers are lambasted for excessive packaging; householders might complain they can only cut down so far without action from packagers; at the same time, plastic bags are the subject of torrents of hatred and various attempts to enact levies.

Reducing packaging and plastic bag use is clearly a good thing, up to a point: one of the basic functions of packaging is to protect goods. Too little packaging, and there would be an increase in food waste. The average weight of packaging naturally comes down over time, as technology and manufacturing processes advance. Benjamin estimates that the total weight of plastics and aluminium packaging reduced by 40% between the early 1970s and end of the 20th Century.⁴⁷

Still, packaging is a real problem. Estimates in the USA suggest that up to a third of landfill space was packaging.⁴⁸ Overall, waste is increasing, at any rate.

Yet a lot of mandated producer responsibility schemes and recycling targets have fallen flat. They run the risk of limiting innovation, by imposing limits and targets. Schemes reliant on government administration risk being bogged down in paperwork and red tape. Product levies on hard-to-recycle goods, such as those proposed by Green Alliance, would presumably have to be product-specific, making a complicated mass of regulation.⁴⁹ Regular fees for products, to include the costs of disposal or treatment are hamstrung by the fact that waste management costs vary considerably with products and localities. Costs vary significantly with time too. The same goes for charges on reducing use of materials — no national or EU-wide levy could realistically hope to accurately internalise the cost of using virgin materials. Commodity prices fluctuate too much for a responsive — and thus accurate and fair — materials tax.

The producer responsibility scheme that has attracted most attention is Germany's Green Dot system. This is a system that was created in response to legislation introduced between 1991–1993 that required manufacturers, distributors and retailers to take back and recycle all consumer packaging. However, they are exempt from taking back the packaging if they participate in a national waste scheme, run by the Duales System Deutschland (DSD). If

⁴⁷ <http://www.perc.org/pdf/ps28.pdf>

⁴⁸ Frank Ackerman, "Environmental Impacts of Packaging in the U.S. and Mexico", *Techné: Journal of the Society for Philosophy and Technology*, (Vol. 2, No. 2, 1996) http://borg.lib.vt.edu/ejournals/SPT/v2_n2html/ackerman.htm

⁴⁹ Julie Hill, Ben Shaw & Hannah Hislop, *A Zero Waste UK*, (London: Green Alliance for Institute of Public Policy Research, 2006)

they participate with DSD manufacturers can label their products with a Green Dot. The dot means the consumer knows the packaging can either be recycled with home collections, or taken to a drop-off recycling centre. Opinion is divided as to the relative merits of the system.

Its advocates point out the system is entirely private sector driven. Government set the rules, but business led the response. Manufacturers pay a subscription to get a Green Dot, and the bulkier or more excessive the packaging, the more the fee. As an NGO, DSD regulates the levies to be fair. It is, in the words of the Chartered Institute of Wastes Management, both “self-financing” and has, “led to MSW recycling over 25%.”⁵⁰

Yet there are some serious criticisms of the Green Dot system. There are diseconomies of scale associated with dual collection systems, which has led to cost analyses to identify the scheme as expensive.⁵¹ The claim to be self-financing is hotly disputed. There are also problems identifying and charging for virgin materials usage.

American companies have complained that, “domestic demand for the Green Dot label places imported goods at a market disadvantage.”⁵² Only EU-based manufacturers can apply for a green dot; other companies either compete at a disadvantage, or have to appoint a German-based importer.

These criticisms should be given due consideration. However, they risk missing what is special about the German system: that consumers have the power to lead to greater waste reductions, and a voluntary system was put in place by manufacturers.

The system holds out some hope. Aside from the trade-skewing aspects, creating a domestic demand for Green Dot goods is a valuable outcome. Manufacturers that cannot associate themselves with the environmental agenda stand to lose by falling out of touch with their customers’ wishes.

If the costs and pitfalls of the German system can be avoided — but give the same impetus to reduce packaging found — then this may be a desirable development.

Consumer-led environmentalism

However, PAYT can help provide a better way: consumer-driven reduction. The idea rests upon the core proposition of PAYT, that as households pay for waste collection they will seek to reduce their waste output. This includes packaging, and means products that are easier to recycle or have less packaging are more attractive.

⁵⁰ SLR for CIWM *Delivering Key Waste Management*, p.25

⁵¹ Lynn Scarlett, Richard McCann, Robert Anex & Alexander Volokh, *Packaging, Recycling, and Solid Waste*, (Los Angeles: Reason Public Policy Institute, 1997)

⁵² <http://www.epa.gov/oppt/epp/pubs/envlab/greendot.pdf>

It is not mindless idealism to think that consumer power can drive improvements in waste reduction. Already, retailers are recognising the power that being green has in the market. Using recyclable materials, or a certain percentage of re-used materials, is used as a boast to attract customers.

The largest scheme in the UK to date is the Courtauld Commitment. At first, 13 major food retailers came together under the aegis of WRAP to pledge to cut waste. This means that 90% of the UK grocery market has agreed to reduce between 5 and 25% of packaging by 2008–12.⁵³ Although critics complain that voluntary pledges have no teeth, they rely on the power of the brand to work. Companies sign up in order to boost their image; but they must know that being found a fraud would do untold damage. A commitment is just that when a reputation is at stake. Moreover, it is clear from the statements issued by the big chains that in trying to attract customers it is driving packaging cuts. Marks & Spencer said that:

We are committed to working in partnership with WRAP to help us implement our responsible packaging strategy which addressed a wide range of environmental and social issues identified by our customers.

Responding to issues, “identified by our customers” means more customers and greater profits. Tesco were similarly unequivocal about why they signed up:

We are investigating new technologies that provide an alternative to landfill and new ways to help our customers reduce their household waste.

As if this were not clear enough, Britvic joined the chorus by agreeing that:

Consumers are looking for more and more ways to reduce waste to landfill and this is an important issue for us as manufacturers – allowing us to make a difference.⁵⁴

By 2007, 24 major retailers and suppliers had joined the commitment. The race to be green has seen more and more companies pledging to do their bit, because they know that being green means bigger profits. Wal-Mart has introduced a Sustainability Initiative, with a packaging scorecard for its suppliers. All incoming packing is analysed for its use of recycled materials, carbon footprint, and the ratio of packaging to product.⁵⁵ Marks & Spencer bought 65 million units of polylactese packaging — material that is made from renewable resources and is often biodegradable. Sainsbury’s is using biodegradable plastic in its SO organic range, mirroring Boots’ use of cornstarch on sandwich packaging. Of all the materials collected by local authorities, Tesco accounts for 13% of it with its recycling facilities at 460 stores. It owns the UK’s first automated recycling machine, at Winchester.⁵⁶

⁵³ http://www.wrap.org.uk/retail/courtauld_commitment/index.html

⁵⁴ Company statements

http://www.wrap.org.uk/retail/news_events/news/major_retailers.html

⁵⁵ According to the International Association of Packaging Research Institutes, quoted online as www.iapriweb.org/news.php?id=6

⁵⁶ Supermarket facts from *Food Packaging – UK – May 2006*, Mintel, <http://www.mintel.com>

The supermarkets and retailers are doing it because their customers want it. As a market research report by a leading consultancy argued:

Environmental issues are increasingly influencing consumer purchase decisions and a growing number of manufacturers are trying to win favour by using ethical, recycled and recyclable materials to package their products.⁵⁷

WRAP agrees that consumers are spearheading the drive. They claim that:

Consumers are driving change by demanding less waste in their bins. The challenge for packaging manufacturers, retailers and consumers is to reduce packaging while retaining its function... understanding the consumer viewpoint and encouraging change are part of the process of reducing packaging successfully.⁵⁸

Coca-Cola announced their response even more bluntly. Sandy Douglas, the head of Coca-Cola USA said:

The long-term sustainability of our business depends on our ability to ensure the sustainability of our packaging.⁵⁹

In other words, customers want recycling and customers equal profits. To meet demands to increase recycling, Coca Cola is going to open a £30 million recycling plant in South Carolina — with similar facilities destined for Mexico, the Philippines, and Europe.

A number of consumer surveys reflect the strength of feeling over eco-friendly companies. In 2006, a MORI survey of 1000 shoppers found that 92% wanted less grocery packaging, and 93% wanted more recyclable packaging. Just under 60% said they would switch supermarket to buy more environment-friendly produce.⁶⁰ A survey by Harris Interactive of over 1,000 shoppers confirmed the findings, by reporting that 84% of shoppers thought there was too much packaging.

Consumer groups have not been slow to respond to the trend either. The Recycled Products guide capitalises on interest in eco-friendly goods by listing goods for sale, with percentages of recycled content.⁶¹ Other websites, such as Don't Dump That⁶², which claims to have nearly 16,000 members, Gumtree or Freecycle allow users with reusable goods to contact each other. Sites can even specialise: the Furniture Reuse Network deals in furniture alone — making sure 2 million items per year are re-used.⁶³

⁵⁷ *Food Packaging – UK – May 2006*, Mintel

⁵⁸ http://www.wrap.org.uk/retail/the_guide_to_evolutionary_packaging_design/index.html

⁵⁹ "Bottled drinks companies under pressure to boost recycling rates", *The Independent*, September 18th 2007

⁶⁰ "Shopper want less packaging, survey shows", *The Independent*, July 9th 2007

⁶¹ <http://www.recycledproducts.org.uk>

⁶² <http://www.dontdumpthat.com>

⁶³ <http://www.frn.org.uk>

Social responsibility and recycling

Producer responsibility is also evident in other sectors as well, as part of the corporate social responsibility agenda. Companies as diverse as Toyota and Nike have established zero-waste targets to reel in customers. Businesses clearly stand to benefit by reducing their environmental impact, because it is popular with consumers. There is, of course, a more basic motive. Irrespective of consumers, businesses can save money by cutting back on waste. Wal-Mart announced in early 2007 that it was aiming in the USA for a 5% cut in packaging by 2013 — saving about \$3.4 billion.⁶⁴

This should be welcomed. The fact businesses can save money by reducing waste does not taint the CSR agenda with cynicism. Rather, it complements it — meaning that customers' wishes are carried out with that bit more energy.

So far, there has been little legislation on food packaging and on the environmental impact of most businesses. By contrast, waste electrical and electronic equipment (WEEE) is subject to strict regulations. EU regulations on WEEE stipulate that consumers can ask a retailer to collect an old product when they buy a new model of the same good. They require that:

When supplying a new product, distributors shall be responsible for ensuring that such waste can be returned to the distributor at least free of charge.⁶⁵

The legislation is designed to make it easy for consumers to get rid of their old goods, and puts the emphasis firmly on the retailer for disposal in an environmentally friendly way.

Some firms are responding as hoped. PC World offers to collect the old object, or receive it with payment for the new equivalent goods.⁶⁶ Household appliance providers such as John Lewis also make it plain they will collect old goods when delivering new ones. Yet mandated producer responsibility has failed to take off. In America, those big companies that are recycling are doing it on their own initiative. IBM, Dell, Gateway and Hewlett-Packard have begun their own recycling programmes — between them, re-using 73,000 tonnes of WEEE.⁶⁷ eBay launched a “Rethink Initiative” to educate consumers on recycling their WEEE, both reflecting and stimulating greater interest in recycling.

It seems that the legislation on WEEE has yet to permeate the knowledge of consumers — and that major retailers have yet to use the regulations to their advantage, by boasting of their enviro-credentials to attract customers. This is despite the fact that WEEE, for all its complexities, is a rich source of metal and plastic recyclables.

⁶⁴ “The Truth about recycling”, *The Economist*, Technology Quarterly, June 7th 2007

⁶⁵ Article 5b), Directive 2002/96/EC of the European Parliament and of the Council, 27th January 2003 on WEEE

⁶⁶ <http://www.pcworld.co.uk/weee>

⁶⁷ Dana Joel Gattuso, “Mandated Recycling of Electronics: Creating a mountain out of a landfill”, *Monthly Planet*, April 2005. <http://www.cei.org/pdf/4527.pdf>

The EU legislation on WEEE warns of the same pitfalls that the German Green Dot system: the inflexibility and costs of mandated schemes. But, it also offers the same promise as DSD — that producers will respond because their consumers want it. Shoppers mean more to manufacturers than legislators, for the simple reason that shoppers mean profits.

You know what you throw

What is the relationship between the potential of consumer environmentalism and PAYT? The answer lies in the mindset change that it entails. Charging shifts the place of waste and recycling in the household consciousness. Buried in a council tax bill, waste does not intrude much upon the actions of a household. But when there is an opportunity to reduce a bill by behaving differently, households will suddenly care a lot more about the environmental impact of their goods.

In this sense, PAYT can be used as a lever on producer responsibility. Mandated schemes *can* have their impact — but only measures that affect the bottom line will really get manufacturers and retailers to re-think. If customers will shop elsewhere to find recyclable or lightweight packaging, then this will be taken seriously. As has been shown, there is already a move to claim the high ground on the green agenda by major retailers. PAYT would stimulate ever-greater consumer-led producer responsibility.

There are claims, of course, that relying on producers and businesses to come up with voluntary schemes lacks enough power to force them to change. Movements such as the Courtauld Commitment, however, rely on the dynamics of marketing. Companies that recycle more can benefit by an improved image; companies that claim to recycle more, but in reality do not, are liable to exposure, embarrassment, and ruined consumer trust. It is in the interests of all companies participating in accreditation schemes to keep the standard high as well, because the Courtauld Commitment itself is as much of a brand as Sainsburys or Tesco. Again, the result is that all participants will want to ensure they meet the targets, if the brand is not to become useless. Any participant that does not pull its weight is surely in line for rebuke from its peers for the same reason.

Of course, to have a meaningful impact, this requires the responsiveness of retailers and companies to demand. But this is not too much to imagine, and it means that the response will be organic, innovative and sustainable.

In short, no other policy would be as effective in making households think about the environmental consequences of what they buy, which services they use, and what companies they buy from, as PAYT.

5. An open market in refuse collection

The one aspect to PAYT that will determine most about the way they function and what they cost is the way they are organised — who is in charge, and on what basis.

A Tender History

Until the late 1970s, most refuse collection in the UK was publicly owned. Municipalities and councils had complete control over waste management. This began to change with the wave of 1980s privatizations, when putting waste contracts out to tender started to become the norm.

A barrage of academic studies seemed to confirm the superiority of contracting out. Forsyth pointed to examples of councils saving up to half on their waste disposal budget⁶⁸; Savas and Stevens surveyed 1,378 American communities, and found that a private contract provided optimal costs⁶⁹. Stevens refined the analysis to argue that this was particularly significant in populations of 50,000 or above.⁷⁰ Kemper and Quigley claimed that a private monopoly would be 13–35% cheaper than other forms of disposal⁷¹, and Dubin and Navarro agreed that contracted refuse was the most economically efficient⁷².

Franchising seems academically unchallenged as the best form of providing waste disposal. There are, however, two essential caveats that might provide pause for reconsideration.

Firstly, contracting out has, in practice, often ended in greater bureaucracy and limited savings. Franchising requires adequate competition to work, and this is not stimulated by the long-term contracts it often uses. The big waste management companies are more likely to outbid local outfits, who would be more dynamic and responsive to the needs of waste management. The UK's particular situation is that waste management needs to change its ways very quickly — again, not helped by long-term contracts. At its very worst, long-term contracting with waste disposal companies has resulted in years of wrangling over the terms of provision — witness the saga of Aberdeen City Council attempting to thrash out a compromise with Sita, to whom they had awarded a 25-year contract.

⁶⁸ Michael Forsyth, *Reservicing Britain*, Adam Smith Institute, London 1980, p.7

⁶⁹ *Evaluating the Organization of Service Delivery: Solid Waste Collection and Disposal*, by E.S. Savas & Barbara J. Stevens. Columbia University Graduate School of Business, New York, 1977

⁷⁰ Stevens, Barbara J "Scale, Market Structure, and the cost of Refuse Collection", *The Review of Economics and Statistics* 60, 1978 pp.438–48

⁷¹ Kemper, Peer, & John M Quigley, *The economics of refuse collection* Callinger Publishing Company, Cambridge, MA 1976

⁷² Dubin, Jeffrey A, Navarro, Peter "How markets for impure goods organise: The case of household refuse collection." *Journal of Law, Economics & Organisation*, Vol. 4, N 2 Autumn 1998 p.237

Secondly, as Callan and Thomas point out, these studies are concerned with the relative costs of public, private and contract provision of waste collection and disposal alone. They take no account of recycling.⁷³ Recycling alters the cost dynamic entirely, and is central to modern analyses of waste management.

The net result of these points is that contracting out might not be the best way to organise waste management. Indeed, trying to find a system that works better by avoiding wrangling over contract details, factors in recycling, and looks for the wider benefits must be crucial to planning waste management.

Such a system is a fully liberalized market in waste and recycling.

Open Waste

For a start, it seems clear that an open market in waste would naturally compliment the pricing structures that suit PAYT best.

Private companies would probably charge with a base fee, and then charge extra for each bucket, bin or bag collected. This is because they would want to guarantee some level of revenue stability, but would also want to represent the extra costs of extra waste in their billing. It is highly unlikely that in open competition a refuse company would offer flat rates, because of the large variety of waste produced by households. By competing for customers, refuse companies would have to keep their prices sufficiently low as well.

The result would be that prices would be not so low as to make greater recycling and source reduction unattractive; yet not so high as to hit poor households, or make illegal disposal preferable. Private companies' prices would be in that golden margin.

Companies working for the benefit of their customers will be quick to establish the best form of waste collection. Keen to maximise the efficiencies of collection, they would use the most appropriate system. This would include determining frequencies of collections. They would strive to attract customers, which means that the energies and finances of a private enterprise would come to bear on awkward problems such as houses of multiple occupancy. Rather than an intensive negotiation — and presumably an extremely detailed contract — between local authorities and providers over levels of provision and adequate service, a private company would identify the optimum level, based on how well it might serve its customers.

Indeed, private provision would make almost every criticism of PAYT redundant. Fears about high administrative costs, or of a, "stealth tax" would be dismissed: firstly, because commercial discipline streamlines bureaucracy; secondly, because competition would mean that the prices would never become unreasonable. Concerns over illegal dumping would be mitigated, because companies providing waste disposal would recycle too. In other words, the best way to pre-empt illegal dumping – by making legal disposal and recycling easier – would be an intrinsic part of private collection.

⁷³ Scott J Calan, Janet M Thomas, "Economies of Scale and Scope: A Cost analysis of municipal solid waste services", *Land Economics* Vol. 77, No 4 Nov 2001, pp.548–560

This is the theory of how PAYT is ideally suited to open competition: but it is backed up by real-life examples. In Ireland, about 50% of waste collection is conducted by private companies. They are allowed to compete openly with each other and with local authority provision to win customers. The result is a healthy system, which cuts out the disadvantages of contracted collection. Charges, as would be expected, are both reasonable and constitute an excellent price structure: balanced so as to increase recycling, avoid fly-tipping, and procure stable revenues. They are sensitive to the needs of their customers, which means that they alter the level of service provision with local conditions. In large urban areas such as Dublin, companies tend to provide wheelie bins; in smaller areas types of bag system are used. Customers have a free choice to switch provider, which means that the onus is very much on providers to find the best way to collect.

Eco-innovation

What really marks out Ireland as an example, however, is the level of innovation that the market has brought about. Companies have to out-do each other to attract customers, and so newer technologies are constantly emerging. For example, one of the disadvantages of introducing bin and weight-based systems is that the capital outlay is significantly higher than bag or tag systems. It requires the complete fitting out of vehicles with on-board computers to co-ordinate disposal and billing. In Ireland, companies invest in such technology for long-term market position. Barcodes and other advances — all of which make PAYT and recycling more efficient — are much more likely to emerge in this environment than in one limited by public funds. Long-term contracts have a dampening effect on innovation; competition *in* the market, not *for* the market, will drive change.

The same process is driving greater advances in recycling procedures as well. Until the mid-90s, Ireland was one of Europe's worst performers for waste-to-landfill. The market in waste was skewed towards landfill as the most economical outcome, and it lacked even the most basic facilities. Yet landfill prices rose: and that innovative energy (and money) was channelled into waste recovery.

The advances in waste processing facilities in Ireland are remarkable. In 2004, a €5 million processing facility was installed in Co Limerick by Mr Binman, a large household waste firm. It employs cutting-edge mechanical separation, which automatically sorts mixed waste into separate streams. This saves their customers time by avoiding sorting their waste. Not to be outdone, Veolia Environmental Services are planning to increase their percentage of materials recovered by introducing similar technology. A €25 million recycling facility was opened in 2006 in North Dublin by Greenstar, the largest waste company in Ireland. Plans are afoot to open similar plants in Cork and Connacht — matching the €20–30 million Mr Binman has invested in new methods in the last 15 years. Ireland has already met its EU waste targets for 2013, and has set its national targets higher still.

The point is that it is competition that is driving these innovations. A company that can boast about its recycling percentages can attract more customers; and like all marketing, it has to be based on real achievement to work. The power of the market is summed up by the slogan of one of the larger Irish companies, Greyhound Recycling & Recovery: "Others talk about recycling. We just do it." The company backs up the claim by recycling 87% of the 430,000 tonnes of waste per annum it receives. Other companies, of course, will want to reach similar levels. Panda claims a 70% rate; Thorntons Recycling, which publishes recycling rates of 50%, opened a €1 million end-of-life facility for vehicles, a new compost manufacturing facility in Co Meath, and is looking to provide further sites. Competition is pushing recycling in Ireland to ever-greater heights.

All the time, these innovations are combined with and supported by PAYT. Their customers know what they pay for their waste — waste management has broken into the everyday concerns of individuals, and companies know how to capitalise. Moreover, with private companies competing for market share, there is a drive to collect in more holistic ways. One of the most consistent criticisms of waste management, voiced by a variety of commentators, is that commercial waste is not integrated with municipal waste. In Ireland, companies realise that they have a lot to offer business customers alongside the domestic market. Unlike most local government planning, there is no artificial distinction. Both are equally appealing sources of waste to recycle, and it is often easier for companies to combine the two.

Related to this rising above the domestic-commercial divide is increasing specialization. This is an organic process, as companies merge and become leaders in particular fields. TechRec Ireland, for example, was opened in 2005 specifically to process waste electrical and electronic equipment. Because WEEE is its core business, its investment is directed to ever-better processing methods. It claims that 98% of waste coming into its facility leaves as useable metals and plastics. It even has a plant, in Dungannon, devoted entirely to fridge recycling. It is linking household and business waste in a very specific area, and turning a profit. This has a particular relevance for tackling fly-tipping, as bulky goods are actively sought for collection. Where TechRec are pioneering the WEEE technology, companies are focussing on what they do best: Enva on hazardous waste, Panda on domestic waste.

So there is specialization — but there are also increasing numbers of exciting spin-offs from waste as well, aside from simple recovery for use as raw materials. Indaver invested in a €4 million Energy from Waste (EfW) facility for hazardous waste. Greyhound manufactures 10 million litres a year of bio-diesel from its waste, and claims it can increase capacity to 100 million. All of its vehicles run on bio-diesel. Enva Ireland is establishing a similar facility. Many companies, having gained experience in streamlining the recycling processes of their own operations, have begun offering consultancy services to other businesses. The dynamic of a fast-paced and growing market is such that it is driving change outside its core concern. This can only be a good thing.

It must be said, however, that the example of Indaver's EfW plant is atypical: because what the Irish market is really doing is making recycling unassailable as the preferred form of waste treatment. Companies see profit in waste; and the gains to be reaped are effectively making the debate over EfW – which as noted in the introduction is highly controversial, infused with local passions and scientifically uncertain — obsolete. Recycling efficiencies are, in essence, lopping the bottom off the waste hierarchy.

The successes of the Irish open market in waste are widely recognised. A 2006 report by the Irish Environmental Protection Agency exclaimed that

While a small number of local authorities were at the end of 2004 still simply collecting household waste and taking it all to landfill, very little industrial or commercial waste passed direct to landfill from private-sector based collectors... since 2000/2001, a major investment has been made in waste processing technology. Moreover, an essential element of such businesses is either the direct ownership of, or access to, a waste transfer or waste recovery facility.⁷⁴

This seems to echo the comments of Erik O'Donovan, Director of the Irish Waste Management Association:

The industry no longer simply collects your waste. The focus is on expanding the range of service, infrastructure and markets to process and extract value from waste. You will see continued capital expenditure on waste infrastructure... Private sector entry into the market has driven Ireland's recycling, with private waste operators working in cooperation with their customers achieving good recycling rates.⁷⁵

A balanced view

Of course, Ireland should not be accepted as an unconditional model for success. In particular, there are a few features of Irish waste management that are eminently undesirable.

The market, for a start, is not an entirely even one. Currently in Ireland, local authorities are both regulators and providers of waste management — a clear conflict of interest. In Dublin, the council is accused (by domestic waste company Panda) of attempting to make a controversial incinerator viable only through monopoly. The Poolbeg incinerator, they claim, would only be sustainable if the council collected more — almost all — waste from the Dublin area. Local authorities are also allowed to give VAT-free bills. As a result, there have been calls for local government to be removed from waste management. *The Sunday Business Post* reported that the government had

⁷⁴ *The nature and Extent of Unauthorised Waste Activity in Ireland*, Environmental Protection Agency, September 2006, p.29

<http://www.epa.ie/downloads/pubs/waste/unauthorisedwaste/name,13695,en.html>

⁷⁵ "Waste trends: what lies ahead", *Sunday Business Post*, February 12th, 2006

plans to remove control of waste from local government.⁷⁶ At the time of writing, it was unclear what the Irish government was proposing, or what form removal of local authority would take — but it is striking that the relevant minister is leader of the Green Party.

More obvious than these market flaws, there is neither a universal service guarantee nor legal obligation to choose a provider for Irish citizens. As a result, about a fifth of Irish households do not have official collections, which equates to 287,000 tonnes of waste unaccounted for.

It is likely that a lot of this waste was disposed of by fly-tipping, burning, or in some rural areas by citizens dropping off the waste at municipal dumps. It is compounded by the reluctance to create a proper licensing system for waste collectors and processing sites. Only in 2001 were licenses put in place. As a result, in 2006 there were 21 illegal landfills and 15 waste facilities operating without the required permits — 3 of them owned by councils. Without permits for collectors, Ireland has widespread illegal collection of waste: single vans and cars, which collect from households, are then frequently fly-tipping the waste somewhere else. 18 of 34 Irish councils questioned by the EPA reported problems with unauthorised waste collection, and claimed that most fly-tipping was due to these operators.

All of this, of course, should also be seen in the context of Ireland's wider waste management framework. What started the growth in private investment was a strong economic signal on the price of landfill. In 2002, the Irish Landfill levy was introduced, a €15/tonne fee that makes up about 10% of the price of landfill. Under the 2001 Waste Management Act, the levy will increase indefinitely at €5/year. However, what has really driven the shift from landfill was an increasing waste stream, but restricted landfill availability. The combination of high demand and low supply, with the landfill levy, increased the price from around €38/tonne in 1999 to between €150 and €200 per tonne in 2005.⁷⁷

These points provide clear lessons for future PAYT schemes. The fly-tipping Ireland experienced was a result not of weak service provision or excessive charges, but of a loophole that allowed households no provision whatsoever, giving rise to a perverse situation where responsible citizens paid, and fly-tippers could go uncharged. The flaws in the Irish licensing regime are similarly easy to avoid, and we should not get too hung up on them. With strong permit schemes, as well as tough measures on illegal waste disposal, the UK is already well placed to avoid the mistakes of Ireland's waste management.

The focus needs to be on what will work from now, in a set context: and it is the *speed* of change in Ireland, and the increasing liberalization of European suppliers that provide lessons for the UK. The clearest of these is that with clear and strong legislation in place, a free market will foment innovation and increase recycling rates.

⁷⁶ John Burke, "Government to strip councils of waste powers", *Sunday Business Post*, September 2nd 2007

⁷⁷ SLR for CIWM, *Delivering Key Waste Management Infrastructure*, p.28

The UK's Landfill Allowance Trading Scheme and landfill tax escalator are already making waste to landfill an unattractive option, so the framework exists to replicate the innovation that Ireland is seeing, and to reap the rewards of a private sector geared up to waste less and recycle more.

To put it in the language of Dubin and Navarro, we should be, “aware of a set of offsetting, more long–run benefits”.⁷⁸ A simple but misleading analysis of the costs of contracting out will not suffice. The benefits of PAYT in a liberalized market seem clear: better and more recycling. These are benefits the UK can ill afford to ignore.

⁷⁸ Jeffrey A Dubin & Peter Navarro, “How markets for Impure goods organise: The case of household refuse collection”, *Journal of Law, Economics & Organisation* (Vol. 4, Autumn 1998) p.237

6. Making recycling commercially viable

As noted, one of the crucial components of PAYT is adequate provision of recycling facilities. It is clear that the Irish companies are so successful because they combine waste collection with better recycling.

They do this because there is money in recycling. This has long been recognised, and in a sense, the debate over placing recycling on a commercial footing has shifted the emphasis on why we should recycle. Previously, recycling itself was the end; but now creating markets based on recycling is the primary concern. In the words of an OECD report:

Encouraging ever-higher recycling rates in an imperfect market may impose very high social welfare costs. In such cases it may be far less costly to address the imperfection within the market than to try and bring about increased recycling rates through increasingly ambitious recycling programmes.⁷⁹

Addressing the market has to be welcomed and competition between refuse companies will help stimulate markets in recycled goods. It is not removing the fundamental benefits of recycling — it is just going to put them on a wider, and much greater, scale. It means creating an industry where before there was activism.

It is quite ironic to note, then, that one of environmentalism's most hallowed precepts might conspire to hinder the development of a full-blown recycling industry. This is the "proximity principle".

This idea has the beguiling central concept that waste is a local problem, and requires local solutions. It sounds convincing, because people *do* get animated by the state of the environment in their immediate surroundings; and the notion people will be infused with communal zeal is attractive. It has led to such schemes as, "adopt-a-spot" in the USA, where a household or group of citizens are given one patch of municipal land to keep litter-free and environmentally healthy. It has meant local social enterprises have led recycling drives, and that primary schools work with NGOs to improve awareness. The proximity principle is powerful stuff. Tom Bentley argues in the preface to Robin Murray's key publication, *Creating Wealth from Waste*, that:

Because waste management is necessarily a local phenomenon, solutions that focus on waste as a productive resource create virtuous economic cycles by feeding resources back into the local economy, even where it is linked to international markets... For a whole range of goods and services that are mainly produced in close proximity to their consumers — care, learning, waste, health, warmth and so on — this means that jobs and firms can be rooted in local areas and yet still be productive and competitive.⁸⁰

⁷⁹ OECD, *Improving Recycling Markets*, p.3

http://www.oecd.org/document/14/0,3343,en_2649_34289_37757966_1_1_1_1,00.html

⁸⁰ Robin Murray, *Creating Wealth from Waste*, (London: Demos, 1999) p.xi,

<http://www.demos.co.uk/publications/wealthfromwaste>

It sounds attractive. Waste certainly should be seen as a productive resource. And in general, local-level activism cannot in itself be a bad thing. But Bentley identifies the key paradox that lies at the heart of the proximity principle. Waste may be a local problem, and citizens may get most animated about their back yard: but household recycling links into an international trade.

Practicalities — not proximity

Or rather, it could link to an international trade — if recycling operated on a sound commercial basis. In order to do this, recycling businesses should be allowed to find economies of scale; regardless of the distance waste has to travel to be processed. Various parties have recognised the consolidation recycling facilities need to work. An environmental consultancy in the USA argued the only self-sustaining community recycling facilities are those near ports or that have ready markets.⁸¹ The Furniture Re-use Network reported that:

Current trials are showing that Local Authority Sites are unable to store the arisings [*sic*] of WEEE recovered from their current facilities and would therefore welcome co-operation with other Authorities to set up regional bulk storage facilities for all WEEE.⁸²

The recent Conservative Party *Quality of Life* policy study group came to a similar conclusion and identified that councils would probably have to come together to have shared facilities for recycling — but failed to make the intellectual leap to seeing that this means rejecting an overly local view of recycling.

As such, if it is not economic for one village, town, city or region to have a certain recycling facility, either because there would not be sufficient intake of materials, or because there would be insufficient capacity to process materials, then there should be nothing to stop consolidation. This does not mean that all community recycling facilities would be shut down and herded into a mega-plant in the middle of the country — but that an organic process would find the suitable level for each recyclable.

Concerns will be raised about the environmental impact of transporting waste, underpinned by the concept of “waste miles”. Yet the example of Irish companies collecting sufficient quantities of biomass to start biofuels production, running their vehicles on this sustainable fuel that tends to produce 60% less carbon emissions than normal fuel, suggests consolidation would soon start making amends. In this sense, freer movement of recyclables will mean greater offsetting benefits.

⁸¹ “The Truth about recycling”, *The Economist*, Technology Quarterly, June 7th 2007: “Even so, most kerbside recycling programmes are not financially self-sustaining. The cost of collecting, transporting and sorting materials generally exceeds the revenues generated by selling the recyclables, and is also greater than the disposal costs. Exceptions do exist, says Dr Morris, largely near ports in dense urban areas that charge high fees for landfill disposal and enjoy good market conditions for the sale of recyclables.”

⁸² <http://www.frn.org.uk/weee>

Indeed, if facilities are allowed to receive waste from a wide geographical area then the potential for developing newer technologies is significantly increased. Under-supplied local sorting centres would never process enough material to move to more efficient sorting systems and if not allowed to merge, over-supplied ones would struggle to cope. Economies of scale would allow investment in automated processing plants and facilities. This is the process that Ireland has seen, where free movement of recyclables — often travelling large distances across the country — has meant that companies have the necessary volumes to build specialised plants.

Concentrated supplies and technological improvements result in greater recycling levels. It is doubtful if local facilities alone could handle the intricacies of recycling WEEE or mixed-material products like Tetrapaks — but consolidation means more of the municipal waste stream will be recovered.

Increased recycling would help overcome one of the problems currently associated with recycling markets: high search costs. These are the costs that those working with the sector must endure to locate what they need, and were identified by the OECD as a key barrier to a better recycling market.⁸³ If private companies were given free reign to innovate, specialise — and advertise — the search costs would soon decrease. Asymmetrical information is another commonly cited cause for market failure. Its basis is that if the seller of a product has information the buyer does not, then it is possible the price agreed will be unfair. But brand names and identities are already developing, with certain types of recycled product winning a reputation for quality. Evolve, for example, is making a name for itself in paper products. By bolstering eco-brands, the greater quantity of recyclables available would actually help enforce quality control. To put recycled goods on a level playing field with virgin-sourced goods, they need to be cheaper. This means there needs to be more recycling — which for many materials, requires free movement of recycled goods.

At the heart of this discussion, for most recyclables, there is a choice. One option is clinging to small-scale local facilities, with small-scale recycling that has limited potential to meet the waste challenge.

The other option is much more recycling, placed on a commercially viable footing by allowing consolidation and movement of recyclables.

It is the proximity principle, or the efficiency principle.

Linking municipalities to markets

Waste movements around the UK are, of course, only a prelude to their place in the international markets for recycled goods — though a distinction should be made here, between household and industrial recycling. Industrial recycling is already a major global industry, supplying factories and manufacturers with raw materials culled from industrial waste. Household waste is the mix of WEEE, plastics, biomass, metals and papers that the average house produces.

⁸³ OECD, *Improving Recycling Markets*

The crucial idea is to try and link household waste with industrial recycling. Materials that are commonly found in the municipal waste stream — aluminium, types of plastic, metals in WEEE — can join the international trade in reprocessed materials. Biomass might be more likely to stay local, but that might change with new advances in biofuels and composting. Whatever the material though, linking domestic waste to the larger market requires profitability: this means consolidation.

Again, it is economies of scale that forms the crux of the matter. Ireland, for example, exports 30% of its municipal waste, because that is cheaper than domestic processing. Some governmental sources see this as a problem⁸⁴; but even if it is likely to change with further investment in Irish facilities, this is not the case. Rather, it is symptomatic of the opportunity at a European level to increase recycling efficiencies.

If businesses in the Netherlands have adequate capacity to process Irish waste, then they should. It means that Ireland's waste is not simply discarded and it means that the Netherlands can strengthen its income from valuable resources and refine its technologies.

Projecting an open market across Europe, if household recyclables are allowed to move around Europe entirely freely, then a few processes should be expected. Firstly, it would secure the long-term viability of most household recycling. Those goods that have industrial potential could join the international trade. Economies of scale would ensure both that facilities were secure, and that the price of recycled goods came down. Secondly, it would mean more recycling. Hard-to-recycle products that only have an international market would find a viability unthinkable on a smaller scale. Third, it would allow nations to specialise in certain types of recovery. Areas that are strong in certain industrial recycling areas would find new sources of inputs. The UK, for example, has a major paper recycling industry — perhaps movements of household paper waste would congregate there. With large automobile and heavy industries, Germany might come to concentrate on metals. Consolidation and specialization would allow for better technologies to improve recovery.

After Basel, faulty legislation

Linking household recycling with global markets is one thing — but is also clear that the EU can do much to improve the international movement of recycled goods.

On paper, there is already a global trade in recyclables. The central international framework for moving waste is the Basel Convention. Initiated in response to several incidents with hazardous waste leakages and accidents at sea, the convention sets up a framework for trans-boundary movements of waste. Exporting countries have to inform importing countries and secure agreement; and in order to prevent dumping of hazardous waste in the developing world, some countries were precluded from imports.

⁸⁴ Forfas, *Waste Management Benchmarking Study: A Baseline Assessment*, June 2006. http://www.wtoconsultation.ie/publications/forfas060613/webopt/forfas060613_waste_mgmt_benchmarking_report_webopt.pdf

EU legislation built on this foundation, with a comprehensive listing of various types of waste movement. Shipments for disposal are banned outright; recovery is permitted. Materials are either, “green listed”, or “amber listed”, or “red listed”, depending on just how hazardous they are. Green listed materials are allowed to be moved without prior notification or consent, but have to be accompanied by some documentation. Amber listed materials have strict procedures for informing receiving ports of shipments; red listed wastes are not permitted to move.

The final qualification for waste movements is the country of destination. EU states do not have a single system: as well as varying interpretations of controls by customs authorities, Latvia, Poland, Slovakia, Bulgaria and Romania have tighter procedures than the other states. OECD members and non-OECD members are also subject to more and less regulation respectively. To assess each nation’s import controls, the EU sent a *note verbale* to other nations asking for clarification on waste movements. At the time of writing, 21 nations had replied, with a wide variety of regulations.⁸⁵

This means that technically, it is possible for shipments of, “waste for recovery” to move around the EU and beyond, within certain limits. In practice, however, the rules act as a major brake on the development of Europe’s industrial recycling potential.

The original purposes of both the Basel convention and subsequent EU legislation are as valid as ever. Preventing natural disasters and dumping of wastes in third world countries are extremely important — and the Basel convention does stand out as an international agreement that was truly based on consensus. Still, a balance has to be struck between these entirely valid concerns, and allowing recyclables to move freely. That balance is not yet struck — with severe results for the recycling industry.

For a start, there is a simple issue of commercial confidentiality. The documentation that accompanies green-listed waste shipments has to include the names and addresses of the consignee and the holder, forcing a breach of the normal accepted codes of anonymity. The information is to be filled out on a single form, but there is an ambiguity in the legislation over exactly where this sheet is to be kept. Inside a waste container is no more practical than exposed to the elements outside — and requiring the haulier to keep copies of the document is hopelessly burdensome with large shipments of a variety of containers. Transit routes are required on the form despite the fact shipping routes often change.

In some industries, the very classification of “waste” presents major problems. Metals, for example, constitute no more hazard as scrap than as the natural raw material — but metals destined for recycling come under stricter controls. The legislation creates an artificial divide. Iron ore is not considered to be waste. Ferrous scrap is, despite constituting no greater hazard. A 2006 market report for the Bureau of International Recycling (BIR) observed that, “clearly, it makes no sense for essential supplies of non-hazardous secondary raw materials to be prevented from reaching hungry customers.”⁸⁶

⁸⁵ Commission Regulation (EC) No 801/2007 of 6th July 2007. This includes India and China — but excludes important regional leaders such as Brazil or South Africa.

⁸⁶ Bureau of International Recycling, *2006 Annual Report*, p.39
<http://www.bir.org/publications/brochures/index.asp>

Always seeking to link industrial and household recycling, it must be noted this applies to household waste too. Mixed household waste counts as hazardous waste — one of the main reasons given by the Irish government for repatriation of waste was the “presence of biodegradable waste giving rise to odours.”⁸⁷ Only dry recyclables count as green-listed wastes subject to limited controls, and they have to have been fully sorted before shipment. Again, this seems to make little sense.

The BIR is an international trade organisation for recycling businesses, and it is telling that its reports contain a litany of problems reported by its various sectors. Sunendra Borad, chairman of the plastics committee, was quite direct, and unfortunately typical: “despite our undoubted environmental contribution, the activities of the plastics recycling sector are often hampered by fastidious officialdom.”

Fastidious officialdom is one thing — but is not helped by confusion over the transit rules. One shipment of plastic film due for India was turned back from a Dutch port, because the Dutch authorities interpreted *Indian* law as including that particular form of plastic as red-listed. The exports would have been allowed in Holland alone. Furthermore, countries which did not reply to the *note verbale* by the Commission’s deadline were counted as having red-listed all waste, potentially blocking vital supplies.

There is little EU harmonisation over what counts as green or amber-listed wastes. Transporting batteries, PVC or electronic waste into the Czech Republic can be conducted as a regular trade; but take wood, paper or glass into Poland, and prior written notification and consent are required. The relevant authorities in member states can apply for “pre-consent” for certain facilities, meaning that no objections will be raised on shipments headed for these amenities: but only 16 facilities in the entire EU have received pre-consent. All of them are in France or the UK. The result is that often shipments of waste are turned back or stopped. In 2004, 42 shipments of waste were repatriated to Ireland, mostly from the Benelux countries. On top of this, 8 shipments were stopped crossing into Northern Ireland — despite the fact that 6 of these were going to registered processing facilities.⁸⁸ Dominique Maguin, President of the BIR Paper Division, expressed concerns in a perhaps understated way:

We must report interference from the authorities in conducting our established trade. For example our members in Italy suffered severe disruption to their exports to Asia owing to a customs’ interpretation of rules governing materials designated as “waste”. Such distractions seem out of kilter with the demands placed on our industry to achieve ever-higher recycling rates.⁸⁹

If there is any industry that cannot afford unclear legislation and haphazard enforcement, it is the recycling industry. By subjecting movements of waste to strict controls — which do have perfectly legitimate, indeed desirable, motives — recycling is handicapped.

⁸⁷ EPA, *The Nature and Extent*, pp.45–46

⁸⁸ EPA, *The Nature of Unauthorised Waste*

⁸⁹ BIR, *Annual Report 2006*, p.24

Facing the Dragon

Above all others, one issue with international shipment of recyclables causes most concern. That is, waste shipments to China. The worry is that waste is either being shipped into China under the good name of recycling, only to go to illicit landfills; or, that legal or illegal waste imports for recycling are processed in ways detrimental to the environment and to human health.

The first of these concerns is more than questionable, for the simple reasons that China pays for its imports. It is unthinkable that it would pay for an import simply to put it in a landfill.

In fact, Asian demand for recyclables is what is underpinning current growth, and what will sustain future growth. American Chung Nam, owners of Chinese paper giant Nine Dragons estimated that China's imports of paper fibres to recycle could go from 17.9 m tonnes to 19.4m tonnes in 2007.⁹⁰ China imported 8m tonnes of plastic scrap in 2005.⁹¹ The strength of demand for raw materials has led to Chinese importers paying anything up to three times the standard market rate.

This is not cause for concern: it is an opportunity to create viable conditions for recycling in Europe. Industrial recycling is already a major exporter to China, and because the Asian giants require so many raw materials, the collection of European household refuse can become profitable by joining this trade. Faced with such high demand, the potential now exists for European recycling — including municipal waste — to establish itself as a permanently cheaper alternative to virgin materials.

The second concern — that recycling in India and China will be conducted in dangerous, unhealthy and environmentally unsound ways — is more serious. 90% of the 10 million people employed in recycling in China are in low-tech small-scale outfits, often using unhealthy methods to refine plastics and metals.⁹² If anything though, this requires an even closer relationship with China on waste. EU legislation needs to find that balance between safety and bureaucracy, and attempt to normalize the illicit trade by doing so. As for the internal movements of waste within China, a closer commercial partnership would provide opportunities to improve basic standards for recovery facilities. One answer might simply be to conduct almost all of the recovery in Europe. A China desperate for resources might well co-operate on effective regulation of recycling facilities.

Overarching these issues are the actions of the Chinese government itself. For obvious reasons, it has little desire to continue to allow illegal imports of waste at all. Until the mid-1990s, China had an extremely lax regulatory regime — the chaos of which underpins current fears. In reaction to this situation, it now has tight controls. The 1995 Urgent Circular of the State Council on Strictly Controlling Waste Importation banned imports for

⁹⁰ BIR, *Annual Report 2006*, p.24

⁹¹ *Ibid.* p.32

⁹² Scott Farling, "On the waterfront: China continues to grow as a destination for scrap plastics", *Recycling Today*, July 2007
http://findarticles.com/p/articles/mi_m0KWH/is_7_45/ai_n19394679

disposal outright, and set up strict regulations on incoming waste for use as raw materials. The 1996 Provisional Regulation on Environmental Management of Imported Waste tightened the restriction, giving one state agency sole power to assess imports — and blacklist offending companies. Finally, the Waste Ban Circular listed further banned imports, including bulky goods such as fridges and microwaves. Officially, China is active in its attempts to regulate imports of waste.

The same is true of recycling operations. Pollution standards were introduced in January 2006 to try and reduce environmental and health hazards — the rather crude effect being to make, in time, the vast majority of low-tech operations illegal. Product standards have been introduced too, with Regulations on Hazardous Substances (known as “China RoHS”). There is a good reason, on top of the human cost, for China to do so: low-quality recycling means low-quality goods. Hi-tech processes hurt people and environment less, and produce better goods.

This adds a further dimension for Europe too. China might, in a matter of decades, be looking to develop its own large-scale recycling industries. They will want more and better recycling — and Europe has a head start. By pioneering the technology, Europe could become a world leader and reap the long-term benefits.

Conclusion

Where does this leave pay-as-you-throw? It seems clear that the innovation that a market in waste refuse stimulates, demonstrated in the last chapter, is perfectly suited to capitalise on the growth of international markets in recyclables. The consolidation, specialisation and economies of scale that will make sure recycling is here to stay are the natural processes that an open market would see – indeed, these are the trends visible in Ireland. Yet nation and EU-wide, this means abandoning the proximity principle. Waste might be a local problem in some respects. But it needs economically viable solutions — and this can only mean open markets at the highest level.

This means that much household waste can be joined up with the international trade in recyclables, a crucial linkage. The international trade needs streamlining too, as the rules on shipments of waste are confusing and do nothing to help an industry that deserves encouragement, not barriers to development. There are issues with exports to China, but dealing with those issues should be part of a wider framework that means that recycling in Europe is not loss-making altruism. Instead, recycling could — and should — be a vigorous, innovative and eco-friendly mass industry.

7. Policy recommendations

Our aim with this report is to give policymakers in the UK and EU better thinking on how to create the framework for waste collection and recycling. The UK lags behind other parts of Europe on recycling: there is much to emulate, and there are mistakes to learn from. Pay-as-you-throw, in a fully liberalized market that operates under a framework of succinct legislation, would be good for the environment and economically sound. Meanwhile, EU legislation needs to be reworked to create a truly thriving market in recyclables.

Our proposed methods are dramatic, but we firmly believe they set out a real hope for an innovative, vigorous and sustainable future in waste.

Recommendations to the UK government and devolved bodies:

The UK government and devolved bodies should introduce PAYT waste charges. The advantages of giving householders financial incentives to recycle are clear. It means greater source reduction and more recycling. More importantly, PAYT makes householders aware of the true costs of waste management. It would be the single most effective measure to make citizens more environmentally conscious. Businesses would respond, as they recognise that if customers pay for waste, then they can attract customers by better packaging and their green credentials. PAYT is a lever on the wider issues of packaging and producer responsibility.

The UK government and devolved bodies should legislate to end contracting-out of refuse collection and allow a fully liberalized competitive market in collections. An open market, where companies would directly offer their services to consumers, will mean that PAYT reaches its full potential. The best approaches to pricing, systems, costs, and fly-tipping would evolve in the competitive process. The advantages — increased recycling, increased eco-awareness and less waste — would be magnified. Companies competing freely for customers will be forced to innovate. Existing legislation means that landfill is not an attractive option: so companies will stake their reputation on more and better recycling. Consumers will look to collection companies to recover more waste, and companies will respond when there is a profit to be won. New technologies and processes will emerge faster with vigorous competition.

There should be a universal service guarantee for waste collection. The market needs, of course, to work within the correct legislative framework. Learning from Ireland, if fly-tipping is not to be a problem, then all households need to have proper collection services from licensed operators.

The remit of the Office of Fair Trading should be expanded to include refuse collection and recycling. Waste management in general, as well as a universal service guarantee, poses issues for rural areas. Because of low population densities and economies of scale, competing private companies

would perhaps naturally cede certain areas to each other. This might endanger the innovation that competition inspires — so it is essential that *if* a monopoly develops, private companies are closely monitored to prevent abuse, and that competition is enforced wherever possible. The threat of competition, as much as competition itself, would be enough to ensure rural areas are not left out of the new settlement on waste management. This requires some sort of regulation. It also needs to be seen that both the consumers' interests are adequately taken care of, and that waste companies are acting properly — including checking their claims for waste recycled are accurate. As such, to provide slim line but effective regulation, the OFT's powers should be extended to waste.

Recommendations to the EU

The European Commission should re-grade all forms of household waste as non-hazardous waste for shipments within the EU. Free movements of recyclables will help put recycling onto a viable financial footing, by allowing adequate consolidation of recycling facilities. There should not be any barrier to the transformation of recycling from local activism to proper industry: we need to forget the proximity principle, and replace it with the efficiency principle. This would happen in the UK with a fully open market, but action is required at the EU level as well — and this means re-thinking legislation on movements of waste. It is an absolutely correct concern that allowing unchecked movements of household waste to developing countries would result in dumping in states without sufficient regulation. It may also be ill conceived to try and re-negotiate a major international treaty such as the Basel convention. Inside the EU, however, there should be no qualms about moving household waste. This includes dry recyclables, as well as biodegradable material. Allowing free movement would stimulate newer recycling technologies, and allow economies of scale sufficient to guarantee the financial security of municipal recycling.

The European Commission should de-classify scrap metals and dry recyclables as waste, and count them as raw materials for the purposes of waste legislation. Free movement of recyclables would allow some materials to join the already significant global trade in recovered materials. Yet this trade too needs to be streamlined and simplified. If there is no good health or environmental reason to distinguish between virgin and recovered material, then there should be no legislative distinction. Materials classified as waste are subject to far greater interference and regulation than raw materials — so it is an unnecessary obstacle for the recycling industry. This is especially true of the ambiguous and misplaced regulations on accompanying documentation on waste, where the harmonisation of EU customs policy would be a welcome development.