Beyond landfill

using green taxes to incentivise the waste hierarchy

esa
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EXECUTIVE SUMMARY

The Coalition Government came to power promising to be the 'greenest government ever'. A pledge was made to 'green the tax base' by increasing the share of environmental taxes in the overall tax take.

However the new interest in green taxation has focused on carbon-related taxes, with waste/ resource taxation largely unchanged. In turn this undermined Defra's 2011 Waste Review, which was confined to fine-tuning existing non-fiscal waste policies.

With landfill tax revenues due to peak and then decline, there is also a risk that Government takes the easy option of extending the landfill tax escalator beyond 2014. But this would be a mistake - raising costs for waste producers while achieving little environmentally.

Instead, we need to look at how an imaginative package of taxes and fiscal incentives could stimulate investment and activity at the top end of the waste hierarchy, while also helping the Chancellor balance the books by offsetting some of the decline in landfill tax revenues. This report assesses the merits of a wide range of green tax options and recommends that the Government introduces:

1. a peat levy to help stimulate compost markets
2. a packaging levy alongside the PRN system to incentivise the reduction, recycling and recovery of packaging
3. Enhanced Capital Allowances for investment in innovative material sorting technologies
4. Green Infrastructure Investment Allowances for investment in new waste recovery infrastructure
5. a lower rate for Carbon Reduction Commitment (CRC) allowances for recycling and reprocessing activities

THE CASE FOR CHANGE

1 Tax policy is a major driver of the waste and resource management sector

The management of waste in the UK has been transformed in the last 10-15 years and tax policy, in particular the landfill tax and the landfill tax escalator, has been central to that. By increasing the costs of landfill in a uniform and predictable way, landfill tax policy has encouraged the industry to invest in a range of alternative treatment facilities for recycling and recovering value from waste. This has helped halve the amount of UK waste going to landfill since 2000.

Landfill tax has also been a strong source of revenue for the Exchequer. The waste management industry has collected around £10 billion in landfill tax since 1997, with over £1 billion collected in the last year alone. ESA estimates that by 2020, landfill tax will have contributed over £20 billion to HM Treasury.

Given this experience, the waste and resources industry believes strongly in the importance of environmental taxes. Indeed, companies in the sector want to see the role of green taxes developed, but they want this to be done as part of a long-term, well designed strategy which supports the investment framework for the treatment technology we need to turn ever more of our waste into valuable resources.

2 The renewed political interest in green taxation has bypassed waste policy

There has been strong interest in recent years in the potential for green taxes to provide a revenue stream for the public finance while at the same time delivering environmental savings and enabling a switch in taxation from 'goods' to 'bads'.

Environmental tax reform was examined in detail by the Green Fiscal Commission, which was established by the previous Government in 2007 and which published its final report in October 2009. The Commission did not however look in detail at fiscal options for the waste and recycling sector and nor did the current Government's review of waste policies.

The Waste Review was led by Defra which meant that it was unable to consider fiscal options which remain the preserve of HM Treasury. HM Treasury has indicated an increasing willingness to explore green taxation options but to date its focus seems to be on energy and carbon as the principal sources of potential green revenues.

This is despite the fact that the waste sector was an early adopter of environmental taxation. The landfill tax was originally designed to be a green tax in the strictest sense in that the Government commissioned an economic study to estimate the environmental damage costs associated with landfill and set the level of the tax at this level. The landfill tax escalator has gone on to become the principal policy driver effecting change in the waste and recycling sector.

What do we mean by green taxes?

The Office of National Statistics defines environmental taxes as those whose base is a physical unit which has a proven specific negative impact on the environment. Such taxes will include transport taxes, energy and carbon taxes, as well as other pollution-related taxes, such as the landfill tax and the aggregates levy.

HM Treasury has to date adopted a narrower definition of environmental taxes which is based on the principal intention behind the introduction of the tax and not its outcome. The taxes which meet this definition are stated to be: the Climate Change Levy; Aggregates Levy; Landfill Tax; EU Emissions Trading Scheme; CRC Energy Efficiency Scheme; and the Carbon Floor Price[1]. HM Treasury has indicated that it intends to meet its promise of greening the tax base primarily through increasing revenues from carbon taxes. This definition does not include mandatory charges, such as the Renewables Obligation, which raise consumer prices and effectively act as a tax on end-users.

In theory, an environmental tax should be set at the level where the costs resulting from the damage caused by an additional unit of pollution are equal to the abatement costs to firms of stopping that additional unit of pollution.

In practice, however, it is sometimes argued that when considering green taxation issues the focus should not be solely on optimising environmental outcomes in response to the tax, but should also include other criteria. The most important of these is the tax's ability to raise public revenues and to offset other, potentially more distorting taxes. Regardless of the precise criteria, the stated objective of the tax should be made clear from the outset: whether it is to tackle pollution levels or to reduce other more distorting taxes.

3 The lack of a fiscal dimension could undermine the Government's waste strategy

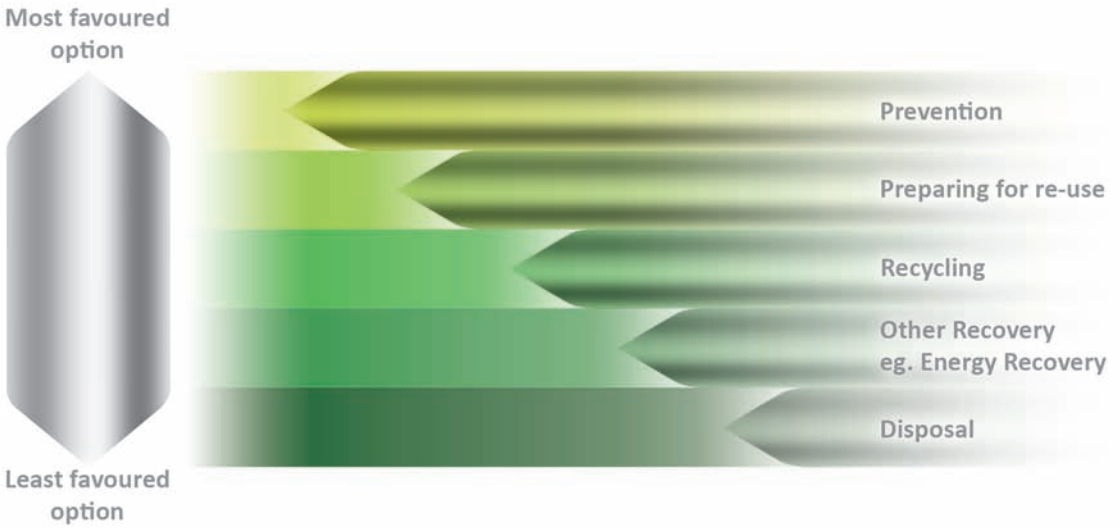
Defra's review of waste policies contained ambitions for England to go beyond the targets set in EU waste Directives for landfill diversion and recycling and to move further towards a recycling society with waste treated as a resource and aligned with the waste hierarchy to the greatest degree possible.

However, the Waste Review was constrained in the policy tools it could identify to deliver this ambition. No new money was available, and the Government's deregulatory philosophy meant little new regulation. Instead, the Review confined itself primarily to fine-tuning existing policies and introducing voluntary agreements, but there is no guarantee this will be enough to meet the Review's aspirations. This is in part because much of the impressive progress made in, for example, boosting recycling rates in recent years has involved taking 'easy wins' through targeting materials that are most easily collected and recycled.

ESA believes that adding a green tax agenda to the limited existing package of Waste Review announcements could be the key to ensuring that the ambition we all want to see is delivered.

[1] HM Treasury announcement, 16 July 2012

Exhibit 1: the Waste Hierarchy



As we try to manage wastes in accordance with the waste hierarchy it is important to recognise that there can be a range of different environmental outcomes within the hierarchy's steps, as well as between them. For example, the 'down-cycling' of mixed glass into aggregate is generally less environmentally beneficial than 'closed-loop' recycling of material back into new glass containers, although both approaches are included in the recycling stage of the hierarchy.

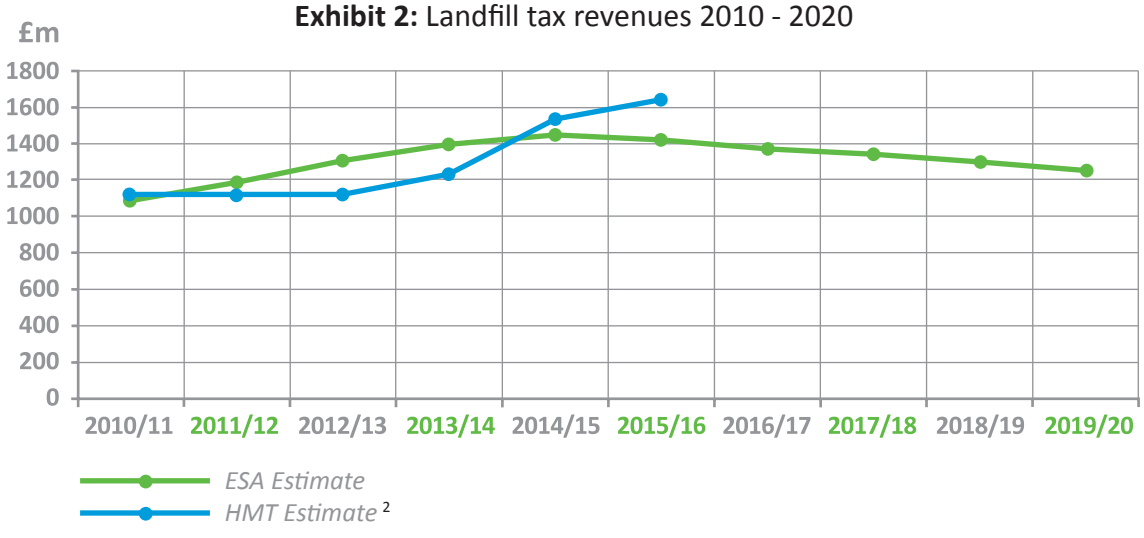
The UK has made huge strides in improving its recycling performance over the past decade. As we now try to raise our performance even higher and capture more difficult elements of the waste stream, the potential for cross-contamination and other complications becomes greater. This can lead to rising costs and challenges to performance.

4 **Landfill tax revenues are set to fall…**

Landfill tax has been a significant source of revenues for the Government but this could be set to change. There was a dip in 2009/10, as volumes fell dramatically during the recession, which has been followed by a resumption of revenue increases. However, as alternative infrastructure comes on stream to meet Landfill Directive targets, ESA expects future revenues to decline for the Government. This will happen as the escalator reaches its medium term target of £80 per tonne in 2014 and remains there whilst landfill volumes continue to fall through to 2020.

ESA expects landfill tax revenues to peak at almost £1.5 billion in 2014/15, after which they are expected to fall. By 2020, landfill tax revenues are likely to be almost £200 million less than at their 2014/15 peak (see exhibit 2).

Exhibit 2: Landfill tax revenues 2010 - 2020



[2] HM Treasury announcement, 16 July 2012

HM Treasury has estimated that it expects revenues to be flatter in the nearer term, but then to rise sharply as it expects a strong rebound in economic activity following the recent recession. The industry, however, does not expect waste arisings to return to pre-recessionary levels of growth, which will consequently lead to revenues in the middle of the decade being lower than anticipated by HM Treasury.

Green taxation in the Devolved Administrations

Landfill tax has been a highly successful environmental tax across the UK. Its potential revenue raising abilities was noted in the 2009 Calman Commission report into the Scottish Administration's finances. This recommended that landfill tax should be devolved to Scotland, enabling the Administration to alter rates and retain the revenues raised.

The Holtham Commission for Wales also looked at the case for landfill tax powers to be devolved to the Welsh Assembly Government but concluded that further research was required before such a recommendation could be made.

ESA is concerned that differentiated landfill tax rates, as could occur under the Scotland Act 2012, would distort the waste market and lead to increased cross-border activity as material is diverted towards the jurisdiction with the lowest disposal tax rates.

However, the devolution of landfill tax revenues could be used to great effect by the Scottish (and potentially the Welsh) Administrations. These have already shown ambition in their respective waste policies and devolved landfill tax revenues, hypothecated to fund waste infrastructure, could help to provide a strong underpinning of fiscal support to implement measures higher up the waste hierarchy.

5 …but extending the landfill tax escalator is not the answer

ESA has considered carefully the case for raising the landfill tax escalator. ESA estimated the impacts resulting from a three year extension to the escalator, to £104/tonne in April 2017. This would lead to revenues climbing beyond the £1.4 billion peak in 2014/15 to over £1.5 billion in 2017/18, before subsequently dropping back to around £1.4 billion by 2020.

ESA estimates that such a measure may lead to additional revenues of around £900 million by 2020. ESA believes however that the case for such a move is not as strong as suggested by these figures. The current landfill tax escalator is already acting as a strong disincentive to landfill and further measures would heavily penalise waste producers. Local authorities in particular could be faced with even more sharply increasing waste management costs during a time of financial strain.

These costs to waste producers would outweigh the monetised environmental benefits which would result from an increase in the escalator. ESA estimates that cumulatively to 2020, landfill tonnages would only be 3% lower as a result if the escalator was increased as suggested. Even if we assume that all of this waste would not have arisen in the first place (rather than being diverted to alternative waste management processes), the resultant carbon savings would be valued at only 40% of the cost of the tax on waste producers.

ESA has therefore focused on alternative fiscal instruments which focus higher up the waste hierarchy.

The drawbacks to incineration taxes

An incineration tax, (ie a tax on inputs to thermal treatment EFW plants), is one of the policy options sometimes discussed as part of the green taxes debate. As part of preparing this report, ESA looked at whether various forms of incineration tax would promote the Government's Waste Review objectives.

Proponents of a broad based incineration tax argue that by raising EFW costs it would move waste out of EFW and into recycling. In practice, the likelihood of this happening must be considered in the regulatory and market context. From 2015 (2014 in Scotland), the main dry recyclables must by law be separated out from residual waste at the point of collection. It is extremely unlikely that any waste management company or local authority would then choose to send these recyclables to EFW. Median gate fees for dry recyclables sent to MRFs are £9/t, compared to £70-90/t when sent to EFW so, as might be expected, the economics strongly favour recycling over EFW[3]. Meanwhile, in Scotland the Zero Waste legislation specifically bans separately collected recyclables from being sent to EFW. So an incineration tax aimed at keeping separately collected recyclables out of EFW would be a dead-weight cost on local authorities and other waste producers with no environmental benefit.

An alternative argument might be that an incineration tax would incentivise efforts to extract any recyclable material remaining in residual waste before it is sent to EFW. Such material might occur because some recyclables intended for separate collection were accidentally put in the residual bin, or they could be materials such as plastic film which are not usually collected as recyclables but could in theory be recycled. In practice, wherever the cost saving/revenue gain from having extra recyclable material outweighs the cost of extraction and collection/bulking, companies will be making efforts to extract such material in any case, and there are many examples of this happening. But a targeted tax on specific EFW inputs that were recyclable and non-renewable could reinforce this incentive and could be an area for further work.

An overarching problem with any incineration tax however would be the risk that it simply undermines the case for investment in domestic EFW capacity and instead leads to increasing exports of a valuable energy resource to elsewhere in the EU. The export of Refuse Derived Fuel (RDF) is already taking place due to currently limited levels of UK EFW capacity. While RDF export is a preferable alternative to landfill disposal, the proximity principle of managing wastes locally means that the development of domestic EFW should be preferred to both. DECC policy is that EFW should be deployed to help boost the UK's renewable energy generation. The most likely result of an incineration tax would be to undermine this approach.

A final option considered was extending landfill tax to become a 'disposal tax' through making EFW facilities which did not meet the R1 definition of recovery liable for it. In theory this would incentivise the construction and use of EFW plants at a higher level of the waste hierarchy. However, the small number of facilities affected means that the potential additional revenue would probably be too small in HM Treasury's view to justify the introduction of a new tax. Furthermore, few new EFW plants are likely to fail to attain R1 status in any case so the extent to which the tax would move waste up the hierarchy would be limited. ESA has previously suggested using ROC banding/electricity market reform to incentivise high efficiency EFW plants and this remains our view.

[3] Gate fee report, WRAP, 2012

6 New green taxes are needed but must be carefully designed and focused on the waste hierarchy

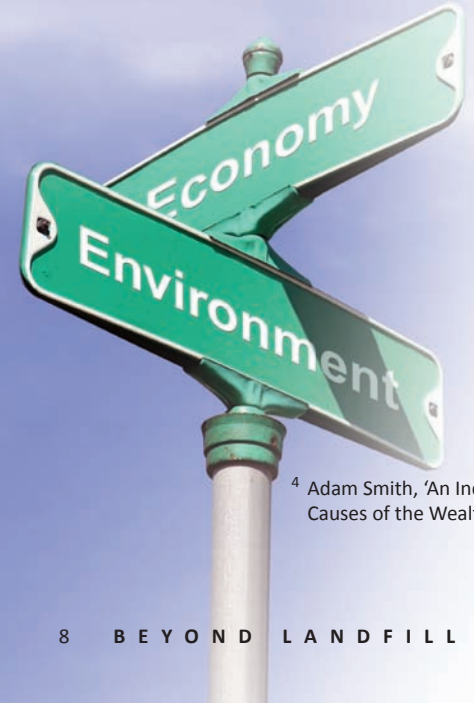
Under the UK approach to environmental policy, the role of well designed green taxes as an efficient means of reducing polluting behaviour is well established (some background to the theory behind green taxation is given in Annex 2). In terms of supporting the objectives of the Waste Review, new green taxes would need to focus on:

- Amplifying existing market and regulatory incentives to move waste up the hierarchy, with a particular emphasis on boosting recycling
- Seeking to incentivise the best environmental options within each level of the hierarchy – for example by encouraging high efficiency among EFW plants or high quality recycling systems.

In addition, green taxes should conform to the general principles of good taxation. These are well established and were first laid out by Adam Smith over 230 years ago[4]. These key principles are equity (or fairness), certainty, convenience, and efficiency (or minimising the burden of compliance).

Green taxes must also be compliant with EU law; they should avoid increasing tax code complexity; they should ensure that the tax base is easily identifiable, measurable and is directly correlated with the targeted behaviour.

When compiling its recommendations for this report, ESA judged a range of potential policy options against the following criteria:



- expected environmental benefits
- ease of identifying the tax base
- potential revenue generation
- administrative costs

[4] Adam Smith, 'An Inquiry into the Nature and Causes of the Wealth of Nations', 1776

Other issues that need to be considered in designing new green taxes are:

Visibility: This can make a large difference to a tax's impact. If levied at the point of purchase it could be more likely to influence consumer behaviour than if levied, for example, on retailers and hidden from consumers. This was key to the success of the plastic bag levy in the Republic of Ireland.

The international context: Domestic green taxes may have competitiveness implications as policy interventions could make UK goods and services more expensive relative to imported equivalents/substitutes. The Government could try to address this through designing a policy package which is revenue neutral overall and which includes offsetting fiscal measures, such as reductions in employment taxes.

Predictability: When the Government introduces new taxes in this area it must be careful to be clear about its intentions and to signal any changes well in advance to minimise perceptions of political risk and to undermine any accusations of tax creep.

Recommendations

This report argues that the Government should use fiscal instruments to raise waste material up the waste hierarchy in the most efficient manner possible. ESA considered a wide range of potential green tax options targeting different levels of the hierarchy and compared these against its policy criteria. (See Annex 1 for the full analysis).

From its analysis, ESA recommends that the Government introduces:

1. a peat levy to help stimulate compost markets
2. a packaging levy alongside the PRN system to incentivise the reduction, recycling and recovery of packaging
3. Enhanced Capital Allowances for investment in innovative material sorting technologies
4. Infrastructure Investment Allowances for investment in new waste recovery infrastructure
5. a lower rate for Carbon Reduction Commitment (CRC) allowances for recycling and reprocessing activities

Exhibit 3:
Key recommendations' performance against criteria

Recommendation	Expected environmental benefits	Ease of identifying the tax base	Potential revenue generation	Administrative costs
Peat levies	A peat levy as proposed could save around 300,000 tonnes of CO_2 emissions per annum	The sale of peat products is easily identifiable at retail outlets	This measure is estimated to raise £88 million	A peat levy could be integrated with retailers' VAT collection and reporting systems to minimise costs
Packaging levies	The introduction of ESA's proposed packaging levies could avoid over 570,000 tonnes of packaging waste in the first year	The obligated producers of packaging waste are already identified through the Packaging Regulations and the PRN system	The introduction of the tax could initially raise over £70 million in gross revenues, and £30 million net revenues following the surrender of PRNs	Administrative costs would be minimised by piggy-backing on the PRN system
ECAs for sorting technologies	This measure could improve the quality of outputs from MRFs and encourage the separation of a wider range of grades of material	Qualifying plant and machinery would be identified and added to the appropriate HMRC list	This measure would result in a short-term loss to the Exchequer but could subsequently bring forward investment leading to higher longer term revenues	Through coordinating with the existing ECA system, this proposal would minimise administration costs
Green infrastructure investment allowances	This measure could bring forward investment in new waste recovery facilities	The definition of qualifying activity which was previously used for Industrial Building Allowances could be adopted for the purpose of the new allowances	This measure would lead to little short-term loss to the Exchequer as high interest costs in the early years of a project are often offset against taxable income	The administrative apparatus which previously worked for Industrial Building Allowances could be easily adopted for Green Investment Infrastructure Allowances
CRC reductions for recycling	This measure would help prevent recycling activities from being penalised under the CRC, which goes against environmental objectives	The metered energy consumption at recycling facilities could be identified relatively easily	Introducing a slightly higher headline rate alongside a lower rate for recycling could create an additional £200 million in public revenues by 2020	Piggy-backing on the existing CRC system would ensure administrative costs were minimised

Recommendation 1:

Use a peat levy to help stimulate compost markets

In the organics sector, government policy is pushing for increased segregation of food and garden waste and sees anaerobic digestion as an important part of the UK's future waste management portfolio. Markets for digestate are however immature and much work needs to be done to help develop them. One way in which this could be done would be through the introduction of resource taxes on virgin fertilisers.

For compost, a peat levy on the purchase of virgin peat could help to encourage consumers to use recycled compost in place of products derived from virgin material. The RSPB has conducted research[5] which suggests that a 4p per litre sales levy on retail bags of peat-based growing media would help incentivise a move towards the use of recycled organics in the horticultural sector and would raise around £88 million in public revenues at the same time.

This approach could also be applied more widely and the government might wish to consider the introduction of levies on other types of virgin-based fertiliser to help develop markets for digestate as well as for compost.

[5] RSPB, 'Greening UK gardens: a levy proposal for peat use in horticulture', 2011

Recommendation 2:

Introduce a packaging levy alongside the PRN system to incentivise the reduction, recycling and recovery of packaging

The Packaging Recovery Note (PRN) system has been the principal means through which the UK has delivered compliance with the EU Packaging Directive. This approach has delivered rapid improvements in the UK's recycling packaging performance with 60.7% of packaging recycled in 2010 across the UK. ESA believes that the PRN system has been a success at delivering recycling and recovery infrastructure for packaging waste. The PRN system is not however without its flaws. Its structure means that obligated businesses are incentivised to meet but not exceed the targets, while the nature of the trading scheme means that PRN revenues are uncertain which can act as a disincentive to investment.

ESA believes that these flaws could be resolved through the introduction of a packaging levy. Different rates should be applied to each of the packaging waste materials. These should initially be based on the value of PRNs for each of these materials over the past two years. The introduction of a packaging levy would incentivise the top of the waste hierarchy and the reduction of packaging waste.

ESA recommends that this new levy operates in tandem with the PRN system. Obligated businesses should be able to surrender their PRNs in exchange for tax credits equal to the packaging levy paid on that material. In this way, gross packaging levy would only be paid on material which was not sent for recycling or recovery. The levy would act as a price floor under PRN revenues which would provide greater certainty for investment in packaging recycling and recovery infrastructure, and it would also provide a strong incentive to obligated businesses to exceed their targets.

Exhibit 4:
Proposed packaging levy rates

Material	Tax rate (£ / t)
Paper	2.50
Glass	17.50
Aluminium	50
Steel	20
Plastic	5
Wood	1.50
General recycling	2.50
General recovery	2

Exhibit 4 sets out illustrative packaging levy rates for different materials. These are based on average PRN values for the period 2008-2011. ESA has estimated that the introduction of these levies would avoid over 570,000 tonnes of packaging waste in the first year across the UK. At the same time, this tax would raise over £70 million in gross public revenues. The surrender of PRNs would provide obligated businesses with almost £40 million in tax credits resulting in net public revenues of £30 million in the first year.

Recommendation 3:

Introduce enhanced capital allowances for investment in innovative material sorting technologies

Enhanced capital allowances (ECAs) have been used effectively by HM Treasury to incentivise investment in water-efficiency and energy-efficiency measures. ESA believes that HM Treasury should increase the scope of ECAs to include sustainable waste management equipment under a new category of 'environmentally beneficial plant and machinery'. This could initially be introduced on innovative material sorting technologies, as used within Material Recovery Facilities (MRFs). Waste management operators might increasingly look to invest in new technologies to address some of the complex plastic polymer concerns with recycling.

For example, the use of optical sorting technology is one way in which MRF operators may try to maximise the quality of outputs from their facilities while at the same time separating a wider range of grades of material.

As the UK increases its recycling rates further it will have to move into more difficult to recycle waste streams. Enabling new sorting technologies to apply to qualify for ECAs could help to bring forward investment in new recycling facilities.

ESA has estimated[6] that new waste management infrastructure could contribute up to £2 billion to UK GDP by 2020. Of this, potentially £725 million could come from new recycling facilities. These new facilities could raise almost £325 million in fresh tax revenues for the Government. The introduction of new ECAs for recycling technology could help to bring forward this investment and revenue potential.

[6] ESA, 'Green growth: don't waste the opportunity', June 2011

Recommendation 4:

Introduce Green Infrastructure Investment Allowances for investment in new waste recovery infrastructure

The abolition of Industrial Building Allowances (IBAs) has led to a significant increase in the proportion of expenditure on waste recovery infrastructure which no longer qualifies for tax allowances. This high rate of non-qualifying expenditure means that, despite low headline rates of UK corporation tax, the overall tax position for investment in UK infrastructure is actually worse than in our major competitors.

Research by KPMG[7] has shown that the post-tax cost of investment in a £1 billion infrastructure asset is over £100 million higher in the UK than in France. The UK also ranked bottom out of 19 countries surveyed by the Oxford University Centre for Business Taxation[8] for their Effective Marginal Tax Rates, which show the rate of return a project must earn if it is to break even in present value terms.

Waste infrastructure assets have been particularly badly affected by the removal of IBAs and ESA believes that the introduction of Green Infrastructure Investment Allowances would be a strong way in which HM Treasury could remove the tax disincentive to invest created by IBAs' removal. Green Infrastructure Investment Allowances should be introduced for sustainable waste management assets which do not otherwise qualify for any other forms of tax relief and should be structured so as to ensure that businesses effectively pay the headline corporation tax rate on their profits over the life of the project. ESA believes that these Green Infrastructure Investment Allowances should be available for investment in waste recovery facilities.

ESA's 'Green Growth' report estimates suggest that new waste recovery facilities could inject over an additional £1.1 billion to GDP. This could provide over £500 million in new tax revenues to the Exchequer. Green Infrastructure Investment Allowances could provide key support in bringing forward this investment.

At the same time, the waste and recycling sector would be making a significant contribution towards green growth and providing a boost to GDP of up to £2 billion.

[7] KPMG, 'Tax strategy for investment in national infrastructure', March 2011

[8] OUCBT, 'G20 Corporate tax ranking 2011', July 2011

Recommendation 5:

Introduce a lower rate for CRC allowances for recycling and reprocessing activities

ESA believes that the CRC Energy Efficiency Scheme should not be acting as a potential disincentive to the recycling and reprocessing of secondary materials, the environmental benefits of which far exceed the energy inputs.

HM Treasury has indicated that CRC allowances will initially be priced at £12 per tonne of CO_2 equivalent. There is however scope for HM Treasury to raise the price of CRC allowances in the future. ESA believes that in the long term the Government should focus on using a pre-announced escalator approach similar to that which has been successful for landfill tax. At the same time, the Government should introduce a new CRC allowance band for the recycling and reprocessing sectors, which would have their allowance prices frozen in nominal terms.

ESA believes that such an approach would ensure that the penalty currently imposed on the secondary resource sector is gradually reduced in real terms over time, while at the same time raising increased revenues from other sectors. In total, ESA estimates that increasing the headline rate to £15 per tonne by 2020, while freezing a lower rate of £12 per tonne for recycling and reprocessing, could lead to an additional £200 million in public revenues in that year.

CONCLUSIONS

The waste management and recycling sector has been a pioneer in the field of environmental taxes. The landfill tax has proven to be a significant driver of behaviour in the sector, while at the same time delivering public revenues on a large scale. The landfill tax escalator is however likely to deliver diminishing revenues in the future as volumes of material disposed of to landfill continue to fall.

ESA estimates that by 2020 landfill tax revenues could drop by around £200 million from a £1.5 billion peak. If however HM Treasury implements the main recommendations included in this report, then ESA believes that the stimulus to the waste and recycling sector could generate fresh revenues which would cover this loss several times over. These revenues could help to stabilise the public finances which would provide potential future scope to offset distorting taxes on employment and investment elsewhere in the economy.

At the same time, the waste and recycling sector would be making a significant contribution towards green growth and providing a boost to GDP of up to £2 billion.

Annex 1:
Longlist policy options considered in preparation of report

Instrument	Hierarchy level	Policy problem addressed	Performance against criteria
Uniform carbon taxes across the economy	All	This would address directly the environmental externalities across the economy and would enable market forces to allocate resources efficiently	Politically unfeasible to introduce given the existing policy framework
Higher excise duties on new purchases of electrical goods	Reduction / Reuse	Low relative price of new goods reduces incentives to reuse	Politically challenging to introduce in difficult economic climate (See Annex 3)
NI exemptions for employers in re-use sector	Reuse	Re-use operations are relatively labour intensive and expensive to operate	The administrative costs of giving special benefits to such a small sector outweighs potential benefits
Packaging taxes operating parallel to the PRN system	Recycling	There is no incentive to exceed the targets contained in the Packaging Regulations	Strong (as identified in Exhibit 3)
Higher excise duties on virgin plastics and other target materials	Recycling	The environmental costs of virgin materials are not fully reflected in their price	The potential revenue base is too small to outweigh potential administrative costs
Charge householders for residual waste collections / provide rewards for increased recycling	Recycling	Householders face little direct incentive to separate recycling and reduce residual waste	Charging is not considered politically feasible in the current climate
Lower CRC rates for recycling activities	Recycling	The CRC currently penalises and disincentivises recycling out of line with environmental objectives	Strong (as identified in Exhibit 3)
Lower excise duties on products containing fewer plastic polymers	Recycling	Products are too difficult to recycle	Administrative costs could be relatively high as the tax base could be difficult to identify

Instrument	Hierarchy Level	Policy problem addressed	Performance against criteria
Lower excise duties on products with high recycled content	Recycling	There are few drivers for domestic demand of recyclate	Administrative costs could be relatively high as the tax base could be difficult to identify
Enhanced capital allowances for innovative sorting technologies	Recycling	There is a need to help maximise quality of material outputs	Strong (as identified in Exhibit 3)
Infrastructure investment allowances	Recovery	The loss of Industrial Building Allowances has made investment in new recovery facilities more difficult	Strong (as identified in Exhibit 3)
Enhanced capital allowances for sustainable waste infrastructure	Recovery	The loss of Industrial Building Allowances has made investment in new recovery facilities more difficult	The acceleration of existing allowances, rather than new ones does not address the issue of a high effective tax rate
Stamp Duty Land Tax relief on sustainable waste infrastructure	Recovery	The loss of Industrial Building Allowances has made investment in new recovery facilities more difficult	The deadweight loss to HM Treasury could be relatively high
Extra dividend relief on investment in sustainable waste infrastructure	Recovery	It is difficult to attract third party investment in waste infrastructure	It would be difficult to design to attract new investors without either discriminating against traditional project sponsors or providing a deadweight loss to HM Treasury
Hydrocarbon duty relief on waste-derived fuels	Recovery	The environmental benefits of using waste-derived fuels in vehicles is not recognised by current policy	The potential revenues would be too small to overcome administration costs
Extending disposal taxes to include non R1 waste-to-energy facilities	Disposal	There is a need to encourage high efficiency energy from waste	Potential revenues would be too small to outweigh administration costs and the taxable base would only cover a limited number of facilities
A continuation of the landfill tax escalator beyond 2014	Disposal	There is a need to continue to move waste further up the waste hierarchy	The increased tax burden on waste producers and local authorities would outweigh limited environmental benefits

Annex 2:
The economic theory of green taxes

Economic activity is based on the efficient allocation of resources. Such resources may be physical, man-made, natural, human or social. In market-based economies, resources are generally allocated using the price mechanism whereby value is determined by the interaction between buyers and sellers. In this way, resources are allocated to the activity for which the highest value is attached, i.e. to the buyer who is willing to pay the most. Setting aside the complexity and morality around whether this is the 'right' approach, it has been demonstrated to be efficient in the sense that it maximises the value from economic resources and minimises costs.

Under this market-based approach, however, resources can only be allocated efficiently if they can be priced appropriately. The production of goods and services may impose some social or environmental costs on society which are not captured by the market price for the good or service produced. This is known as a 'negative externality'.

Green taxes are in theory designed to correct for this negative externality. Without a green tax, a polluter will only face the private costs and benefits which are captured through market prices and will produce a level of output which equalises these private costs and benefits. The full social (environmental) costs of its production are not however captured in the market price and so the polluter will tend to overproduce. The introduction of a tax which raises private costs so that they are consistent with full social costs will disincentivise the original polluting activity and reduce it to its socially optimal level.

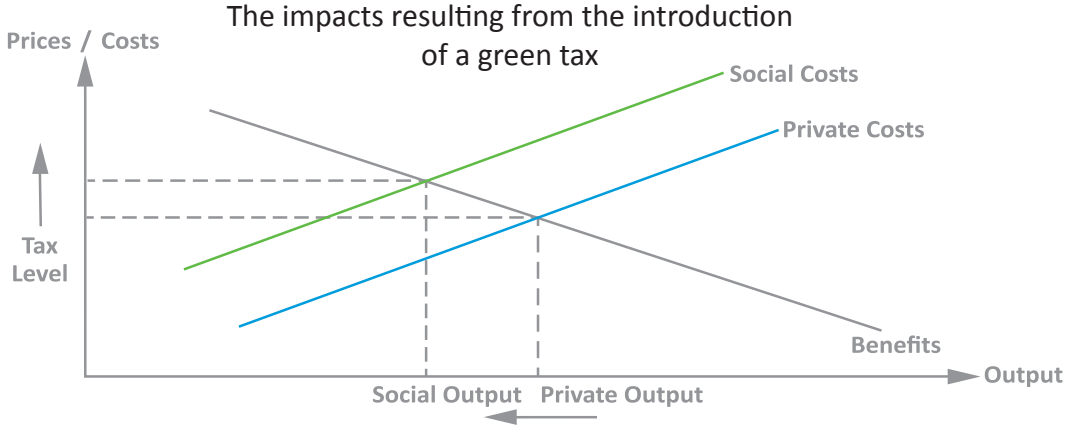
An important feature of green taxes is that they generate revenues for the public coffers. These revenues can of course be used to fund public expenditure and investment. At the same time, they enable the Government to reduce equivalent levels of taxation elsewhere in the economy. This is important as the Government taxes some forms of behaviour which are generally considered good, such as employment and investment. These taxes distort behaviour and lead to lower levels of the activity being taxed. An important feature of greening the tax base then is that it enables the Government to switch the burden of taxation from being on good activities to bads.

Landfill tax however shows us that as economic actors respond to taxes by reducing the taxable activity, revenues can become uncertain. This can in some cases require new bads to be found.

Green taxes are generally considered to be an efficient policy intervention for achieving improved environmental outcomes. This is because they achieve their objectives at least cost when compared to regulatory measures. When discussing economic efficiency, a least cost approach is generally what is actually meant. A process with lower costs is more efficient than a higher cost alternative, as its lower costs enable it to produce more output for the same level of inputs or alternatively to produce the same output using fewer inputs.

Green taxes deliver both static and dynamic efficiency. This means that, under a green tax, least-cost polluters will self-select to produce, which is important in a context where regulators will not necessarily be able to differentiate between the different pollution abatement costs faced by different firms. At the same time, polluters will face an ongoing incentive to innovate in pollution control and to lower their abatement costs, which in turn lowers optimal pollution levels.

The impacts resulting from the introduction of a green tax



Annex 3:
Case study: Role of tax policy in promoting waste prevention and reuse

Waste Electronic and Electrical Equipment (WEEE) is one of the fastest growing waste streams in the UK. The European WEEE Directive sets absolute targets for the amount of WEEE which should be recycled per person in each Member State. The UK has comfortably met its target to recycle 4kg per person and collected around 7.5kg per head in 2010. This was however still a long way behind the top performer, which was Norway where 19kg of WEEE per person was collected for recycling and recovery.

WEEE is an increasingly important element of the waste stream as it also contains a number of rare earth elements which are considered by policy makers to be critical materials. The EU Raw Materials Initiative and its Resource Efficiency Roadmap both highlight the need for the increased use of secondary materials across the EU as a means of improving resource security across the EU economy and reducing dependence on imports.

ESA believes that the introduction of carefully considered changes to consumption taxes on electronic goods could provide an effective means of targeting the top of the waste hierarchy and helping to incentivise the reduction of WEEE generation, as well as the re-use of older equipment.

For example, the Government could introduce a reduction in VAT on the sale of second-hand and refurbished EEE to help stimulate markets for re-use. This could be funded through a corresponding 1% increase in VAT on new EEE, a measure which ESA estimates might be expected to raise almost £600 million in public revenues.

ESA therefore suggests that HM Treasury examines the case for rebalancing consumption taxes on electronic and electrical equipment to stimulate re-use, either through changes to VAT if allowed under the terms of the EU VAT Directive, or alternatively through the introduction of targeted changes in excise duties on specific EEE categories, such as those which are in the lower categories for energy efficiency labels.

WHO WE ARE

Britain's waste and resource management industry provides services which are essential to modern life. Employing over 95,000 people and with an annual turnover of £11bn, the companies that make up the sector collect the waste produced by households and businesses across the UK, treat the waste responsibly, and turn a large percentage of that waste into new resources and energy for the nation.

In recent years the industry has transformed itself. Ten years ago, over three-quarters of Britain's waste went to landfill (compared to well under 50% today) and waste management was chiefly focused on the logistics of collection and transport. While these still matter, the industry has developed a range of technologies to treat waste and extract value from it. Innovation is a constant feature of modern waste management. The industry is also at the forefront of debates about waste prevention and recycling.

The Sector at a glance

- Total turnover: £11bn
- Direct Employment: 95,000 people
- Municipal waste handled each year: over 26 million tonnes
- Energy generated (from waste combustion and landfill gas) each year: approximately 6,700 GWh, 1.5% of the UK's total electricity supply and over 20% of our renewable electricity. Greenhouse gas emissions down by 70% since 1990
- The top seven companies account for around 40% of turnover. Many hundreds of SMEs provide either localised or more specialised services

ESA: The voice of the industry

The Environmental Services Association (ESA) was founded in 1968. Today ESA's Members represent approximately half of the sector, including all the major companies, and ESA speaks on their behalf in Britain and in the EU. ESA:

- Lobbies constructively for a policy framework which enables ESA Members to operate profitably and responsibly for the benefit of the UK environment
- Prepares sector health and safety guidance
- Works to raise operational standards across the industry

environmental
services
association

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