

Resources, Conservation and Recycling 23 (1998) 259-270

resources, conservation and recycling

The UK Landfill Tax: an analysis of its contribution to sustainable waste management

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Received 9 May 1998; accepted 9 May 1998

Abstract

The UK Government in October 1996 introduced a Landfill Tax to ensure that landfill waste disposal is properly priced so as to reflect its environmental cost and to help promote a more sustainable approach to waste management in which less waste is produced, reused or recycled. The UK Customs and Excise have recently reviewed the tax and the report indicates that there has been a modest reduction in waste going to landfill by industry but not households. It is submitted that for there to be a significant move towards a more sustainable approach to waste management to meet the targets set in the National Strategy the tax should be higher and the money raised by the tax should be invested to make alternatives to landfill cheaper and more readily available. It is also submitted that the Tax Credit Scheme, introduced as a means of enabling some of the tax to be invested to promote better waste management, is inadequately funded and the money is inappropriately focused. Following an examination of the projects and contributions made under the Scheme it is found that most of the contributions are not made towards projects which will fulfil the UK Government's perceived purposes. It is further submitted that there needs to be a more rational approach to waste management and legislation in Philadelphia forms a good case study of such an approach © 1998 Elsevier Science B.V. All rights reserved.

Keywords: UK Landfill Tax; Waste management

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Table 1 The UK wa	aste hierarchy
Reduction	Most attractive option centred on reduction or minimisation of waste at source in- cludes using less packaging
Re-use	Including refilling of receptacles.
Recovery	Including the incineration of waste to use as energy, the composting of waste and materials recycling
Disposal	Least attractive option usually involves landfill.

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1. Introduction

In its White Paper 'This Common Inheritance' [1] the UK Government recognised that a change was necessary in the way both industry and householders disposed of their waste. In the UK the predominant method of disposing of waste has been, and still is, by depositing it in landfill. Currently landfill takes about 84% of Municipal Solid Waste (MSW) [2].

Since 1st April 1996 the Environment Agency has taken on the responsibility for regulating local authorities' waste collection and disposal [3] and local authorities dispose of waste either directly, by operating their own collection and disposal service, or indirectly by employing private companies to carry out these tasks [4]. It has been found that there are fewer voids to dispose of the waste, that such disposal could cause long term problems in that the sites have to be monitored, for example for gases created by the waste, and maintained [5]. The Environment Agency, local authorities and Central Government foresee these problems to be costly so are now keen to transform practices so that less waste is created as well as disposed of in a more environmentally acceptable manner.

In 'The Common Inheritance' [1] the government recognised that there was a well established hierarchy of waste (Table 1). This hierarchy reflects the most desirable methods of waste management in order to achieve a reduction in the quantity of waste generated, in line with the principle of sustainable development. It further recognised that the UK managed most of its waste by disposing of it in landfill sites which was a means of managing waste at the bottom of the waste hierarchy. There was therefore a need to push the management of waste in the UK further up the hierarchy towards recovery/recycling and reuse and, at the top, reduction. To promote more sustainable waste management practices the UK Government published a National Waste Strategy, 'Making Waste Work', which sets waste manage-

Table 2 UK national waste strategy targets

To stabilise household waste production at 1995 levels;

To reduce the proportion of controlled waste going to landfill to 69% by the year 2005;

To recover 40% of municipal waste by the year 2005;

The provision of close to home recycling facilities for 80% of the households by the year 2000; For 40% of domestic properties with a garden to carry out composting by the year 2000.

Norway	40	
Germany	32	
Sweden	28	
Denmark	28	
Netherlands	24	
Italy	20	
UK	13	
France	11	
Spain	7	
Finland	6	

Table 3 Comparative landfill costs in European States in 1992 [7] (cost £s per tonne)

ment targets (Table 2) [6] also the Landfill Tax was introduced on 1st October 1996 by the Finance Act 1996 and the Landfill Tax Regulations 1996.

2. Purpose of the tax

The purpose of the tax as stated in the March 1998 Review Report by the Department of Customs and Excise is firstly 'to ensure that landfill waste disposal is properly priced so as to reflect its environmental cost' and secondly 'to promote a more sustainable approach to waste management in which less waste is produced and more waste is either reused or has value recovered from it' [7].

There are two main ways in which this purpose may be interpreted. The first interpretation is that the tax may be used solely to increase the cost of landfill to force industry and, through local authorities, households to act in such a way as to push their waste management technique up the hierarchy. The justification for this is that landfill is too cheap and therefore, at the moment, a relatively easy option for managing waste [8]. The belief is that if it were more expensive waste producers would think of other ways of disposing of their waste. When a landfill tax was proposed it was pointed out that at that time the cost of landfill was much higher in other parts of Europe (Table 3) [9].

Under this interpretation the twofold purpose may be achieved merely by virtue of the tax raising the cost of landfill. The money itself raised by the tax is not an essential part of the equation in achieving its purpose.

The second interpretation is that the tax not only increases the cost of landfill and promotes the better management of waste by this expedient alone but also raises money which itself may be used for the promotion of a more sustainable approach to waste management. 'Prima facie' the tax is not interpreted in this second way. In his Budget speech of Tuesday 28th November 1995 the Chancellor of the Exchequer stated:

"This is a tax on waste in order to reduce the tax on jobs. The money raised by landfill tax will allow for a matching cut in the main rate of employers' National Insurance contributions by a further 0.2-10% from April. This will cut the costs of employment by £500 million and make it cheaper for business to create new jobs."

The UK Government of the day appeared to see the tax as primarily a way of raising money for general purposes. With Government earmarking the tax for purposes other than projects to push waste management up the hierarchy there is a risk that government will rely upon such funds as general income and will itself have incentive to increase landfill tax due to the revenue that it brings in.

Although this seems to be the Government's favoured interpretation of the purpose of the tax, a Credit Scheme was introduced in order that at least some of the money raised is used to promote more sustainable waste management. It appears that the importance of the Credit Scheme in promoting a more sustainable approach to waste management is far beyond the status that government has accorded to it, if that is to be judged by the 20% that may be claimed for environmental projects. It is apparent from the tenor of the Review Report that the present targets (much less more stringent standards that are proposed), put forward by the government in the National Waste Strategy 'Making Waste Work' (Table 2) [6], are not likely to be met unless there are alternatives to the management of waste which are both readily available and cheaper than landfill.

In assessing the extent to which the landfill tax is effective two questions need to be asked: 'To what extent has the presence of the landfill tax improved the management of waste? To what extent is the money raised being used through the Tax Credit Scheme to promote better waste management?'

3. Operation of the tax and the credit scheme

The tax is collected through the operators of licensed landfill sites who must register with the Customs and Excise. A disposal of waste is liable to the tax if the material is disposed of as waste by way of landfill. Waste is for these purposes material which the producer disposes of intending to discard it or throw it away even if it could have been re-used.

The tax is currently levied at a rate of $\pounds 2$ /tonne for inactive or inert waste and $\pounds 7$ /tonne for all other waste, although this figure is to be raised to $\pounds 10$ /tonne following the budget speech on March 1998. The weight will normally be calculated by the use of a weighbridge although if no weighbridge is available then the Customs and Excise may agree an alternative method of calculating the weight of the waste, e.g. the maximum weight that the lorry can carry or estimated volumes of waste converted to weight.

The landfill operator will have to account for the tax collected quarterly and keep, records of: tax due, any credits of tax or adjustments (where permitted), the

tonnage of waste accepted and the rate of tax attributable to that tonnage. Records must be kept for 6 years.

Landfill operators can claim a credit against their Landfill Tax payment if they make a voluntary contribution to an approved Environmental Body. Up to 90% of the contribution can be reclaimed but the total credit in any 12 month period must not exceed 20% of the total landfill tax bill.

According to Regulation 33(2) of the Landfill Tax Regulations. The contribution to the Environmental Body must be spent on one of the following approved objects:

(a) Reclamation, remediation or restoration or any other operation that facilitates the economic, social or environmental use of land where its use has been prevented or restricted because of previous use. This may include the creation of new wildlife habitats or public parks.

(b) Any operation intended to prevent or reduce any potential for pollution or to remedy or mitigate the effects of any pollution on land polluted by a previous activity. This will include contaminated land.

(c) Research and development, education or collection or dissemination of information about waste management practices, the purpose of which is to encourage the use of more sustainable waste management practices. This will include research, pilot schemes, demonstration projects or training schemes aimed at waste minimisation, reuse, recycling, composting and energy recovery. (d) For the protection of the environment, the provision maintenance or improvement of a public park or public amenity in the vicinity of a landfill site. This will include the creation of wildlife habitats, conservation areas, urban forestry and positive land management.

(e) For the protection of the environment, maintenance, repair or restoration of a building or the structure of religious significance or of historic or architectural importance that is open to the public and is in the vicinity of a landfill site.

(f) The provision of financial, administrative and other related services necessary to the functioning of the Environmental Body.

There are certain restrictions in relation to these operations which are: that any reclamation or remediation under (a) or (b) will not be regarded as an approved object if it is for the benefit of a person who carried out or knowingly permitted the contaminating or polluting activity. Also the landfill operators must not directly benefit from any of the schemes of Environmental Bodies. If the contributions are not spent on approved purposes then the credits may be recovered.

In order for a landfill operator to claim tax credits under the scheme the environmental body must be registered with Environmental Trust Scheme Regulatory Body Limited (ENTRUST). This body also gives approval for projects which are to be funded under the Tax Credit Scheme. This is the sole regulatory body of the scheme and is itself funded by registration fees and administration fees which are charged on approval of each project. This fee is a percentage of the tax related funding, currently 5% [10].

4. The effect of the landfill tax and credit scheme

4.1. To what extent has the presence of the Landfill Tax improved the management of waste?

The Customs and Excise Review stated that it was difficult to measure the success of the provisions since the pretax data lacked precision. There is some research [11], quoted in the Review, which stated that a third of companies were considering waste management measures as a result of the introduction of the tax. In addition a recent survey indicated that the tax had prompted about two thirds of businesses, councils and contractors to reduce the amount of waste that they produced and about half the respondents claimed that their disposal costs had risen by 10% since the introduction of the tax [12]. There was also a general feeling amongst respondents to the review that industry was taking action to reduce its waste.

Domestic waste on the other hand was generally agreed by the respondents to be increasing. The Review report suggested that this may be due to smaller businesses disposing of their waste through the domestic collection system such as Civic Amenity Sites. Even if this were so the indication is that the domestic households are not reacting to the increase in cost. It is submitted that there are two reasons for this. Firstly the tax will not have affected the domestic household until the next local authority rate demand and secondly many domestic households are ignorant of the waste management alternatives or they are (or at least feel) impotent to do anything about waste management and its related costs.

As the charges for landfill are aggregated and spread according to criteria other than waste production there is nothing in the landfill tax to reward the efficient household. A local authority waste management policy is only as efficient and effective as the total amount of its waste. It will be interesting to see if any parties at a future local election will seek to obtain votes by claiming that they will reduce rates by reducing landfill tax or by implementing a waste management policy that will put waste higher on the hierarchy.

In the absence of clearer evidence the best that can currently be claimed for the mere existence of the tax is that the increased costs that it represents has made a proportion of industry more aware of waste and put it on the agenda of more company board meetings. Charging more for landfill per se would not appear to be enough to improve waste management to fulfil the targets of the National Waste Strategy. This brings us to the second question.

4.2. To what extent is the money raised being used through the Tax Credit Scheme to promote better waste management?

The ENTRUST Press Release dated 27th September 1997 declared that some 93 landfill operators had 'contributed' £8.5 million (£4 million since August of that year) to 90 Environmental Bodies (although over 440 had registered) for over 1000 projects. By the ENTRUST Press release of the 7th November 1997 the total

Category	September 1997	November 1997	January 1998
(a) Land reclamation	4.3	4.0	4.0
(b) Land remediation	4.0	4.0	3.0
(c) Research and education	27.0	27.0	30.0
(d) Environmental protection	55.5	55.4	52.9
(e) Building restoration	9.0	9.4	10.0
(f) Administration	0.2	0.2	0.1
Total projects (approx)	1089	1536	2343

Table 4 Growth and classification (%) of approved ENTRUST Projects 1997/98

number of landfill operators had increased to 200 and the contributions were some \pounds 42 million (the largest contribution being \pounds 3.5 million) to 200 Environmental Bodies (with over 500 having registered) for over 1500 projects. The January 1998 press release showed a total of some 300 landfill operators contributing over \pounds 60 million to some 250 Environmental Bodies (out of over 600 enrolled) for over 2300 approved projects.

The estimated total amount raised by the tax is £450 million of which only 20% (£90 million) would be available under the tax credit system. This shows a good response from landfill operators in the first year since they are contributing, through tax credits, around two thirds of the potential £90 million under the scheme.

Attached to each press release is a list of the approved projects as at that time. Although there was a substantial rise in the number of approved projects between September 1997 and January 1998 the increase was pro rata as between each category. The categories which attracted the most projects in September continued to attract a proportionate number of projects notwithstanding any increase in overall numbers. Over 50% of the projects were in category (d) with 30% in category (c) 10% in category (e) and 4% and 3% in categories (a) and (b), respectively (Table 4) [13].

The January Press Release contained a list of contributions made under the Tax Credit Scheme in relation to each project. It was noted that the number of projects within a category did not reflect the amount of the contribution. Although only 10% of the approved projects were for building restoration they received 22% of the total funding. Research and education accounted for 30% of the total number of approved projects and yet only received 15% of the total value of the contributions (Table 5).

In 1997 a survey was carried out in relation to the Counties of Surrey and Northamptonshire [14] to inter alia assess the waste management industries initial response to the tax credit scheme and, as part of that survey, to see which environmental bodies the industry would be likely to fund. The aggregate results were that 36% of the companies favoured building restoration, 29% favoured land restoration; 21% preferred the funds to be used for research and 14% said they would choose education. Although these survey classifications do not exactly fit the

Category	Contributions (%)	
(a) Land reclamation	13.0	
(b) Land remediation	3.5	
(c) Research and education	15.0	
(d) Environmental protection	46.0	
(e) Building restoration	22.0	
(f) Administration	0.5	

 Table 5

 Destination of contributions (%) January 1997

approved projects classifications nevertheless they do give an idea of what projects the industry favoured. It will be noted that building restoration and research and education were initially first and second preferences respectively. Both are still preferred areas to fund with building restoration having the third highest number of projects and the second highest amount of funding and education and research having the second highest number of projects and the third highest amount of funding. However land restoration/environmental protection has in fact been the most favoured area for both the number of projects and funding. It is submitted that the reason for this was the potential usefulness to the industry was not at first fully appreciated. It is however now seen as an important means of improving public relations.

5. Discussion

Firstly, the credit system is a success in that £60 million of the £90 million has been claimed in the first year of operation. However these figures are also disappointing. There is only £90 million of a potential £450 million, the remainder is used to reduce employer's National Insurance contributions. It is likely that even under the present scheme the full 20% will be claimed by the end of the second year which will leave some Environmental Bodies without funds for their projects. The figure of 20% is therefore too low.

Secondly, the figures indicate a considerable increase in the last quarter of the year in both contributions and projects. This must partly be due to more Environmental Bodies becoming registered and all parties getting used to the operation of the system. However by looking at the projects it is submitted that it is also partly due to landfill operators being aware of what the Credit Scheme could do for them. There is nothing wrong with this provided the benefits to the operators and to the aims of the Scheme are mutual.

This highlights a weakness both in the method of funding and the categories for which funds may be contributed namely that it is the landfill operator that decides whether or not to take part in the Credit Scheme and secondly what Environmental Body will receive a contribution, taking account the projects in which the Body is or is likely to be engaged. It is likely that landfill operators will select the beneficiaries of their bounty and this will lead to only those Bodies and projects being funded which will, at least, not reduce the profitability of the operator in so far as landfill is concerned and may indirectly be of benefit to the operator. Category (d) offers the landfill operator an opportunity to indirectly benefit by way of a public relations exercise as all the projects must be within a 10-mile radius of a landfill site. Operators are able to woo residents and ease the obtaining of permission to enlarge or obtain new sites for landfill by reducing the number of protests be putting something back into the community though the funding of amenity projects. The tax is thereby being used to fund local environmental projects as a form of compensation and mitigation of the effects of landfill sites [15]. However such projects do not contribute to more sustainable waste management.

Lord Cranbrook, Chairman of ENTRUST acknowledged that landfill operators perceived this "in terms of the marketing opportunities to existing and new clients, as well as the obvious public relation advantages in the localities of the sites". [13]

A demonstration of a reluctance of landfill site operators to contribute to some Environmental Bodies is the recognition by both ENTRUST and the Customs and Excise that Environmental Bodies are reimbursing landfill site operators the 10% of their contribution that they are not able to reclaim by way of tax credit. This in effect reduces the contribution that is being made. It is difficult to see what purpose the 10% requirement serves and only vitiates against projects that are less popular with landfill operators. The Customs and Excise Review Report refers to "a perceived intention of the scheme" being that "site operators should contribute from their own pockets". Why should they be required to do so? The Scheme should have an expressed intention to direct public funds raised by landfill to promote better methods of waste management and that such an intention should not be reliant upon the beneficence of the landfill operator or any other person.

Thirdly, to obtain a clear picture of which projects are preferred by landfill operators it is necessary to look at the amount of money being contributed and not merely consider the number of projects to which contributions are being made. Category (c) relates to education and research which includes projects which directly seek to push the management of waste further up the hierarchy, such as re-cycling projects, composting and increasing awareness of alternatives to landfill. Although 30% of the projects are within this category only 15% of the contributions are paid for such work. Whereas high profile building restoration which may do much for the landfill operators image but does little for the improvement of waste management receives 22% of the funds but only accounts for 10% of the number of projects. As noted in relation to the second issue there is a risk that the Credit Scheme will become an alternative National Lottery fund. The Credit Scheme must ensure the money is better focused if it is to do more than just pay for 'good works'.

Fourthly, the categories of approved projects themselves are disappointing. For example, category (c) relates to education and research etc. This appears to uphold the very purpose of the tax, the investigation of alternatives and the educating of industry and households. The category refers to pilot schemes and demonstration projects the very things to set the process of raising the management of waste up the hierarchy. It may therefore be expected that there would be further provisions in this or another category to support longer term programmes. However this is where the possible development to achieve the proclaimed purpose of the tax begins and ends.

Fifthly, there is a detrimental limitation in that local authorities are prohibited from establishing Environmental Bodies. The Customs and Excise Review Report states that the respondent local authorities suggested that they should have some influence over the projects which should receive contributions. It is submitted that such involvement would make the contribution a matter of 'public expenditure'. However Environmental Bodies could be established which could fund local authority waste management schemes. These could be set up at the instigation of local authorities but run independently to ensure the monies are spent on environmental projects and do not become just an alternative source of public funds.

Reference was made in the Review Report to local authority recycling schemes. However in the light of the limited number of projects in categories (a) and (b) this may be an opportunity to direct funds to the remediation of contaminated land. The Government Consultation Paper 'Paying for Our Past' [16] followed by the policy document 'The Framework for Contaminated Land' [17] recognised that the principle of the polluter pays was ineffective in many cases of contaminated land since the polluter was no longer available to accept liability. Under the Environment Protection Act 1990 as amended by the Environment Act 1995 the responsibility of remediation where a polluter cannot be found is the local authority. Also the continued presence of a tax exemption for landfill from contaminated land indicates that on-site remediation appears to be under-researched. A local authority instigated Environmental Body may be an appropriate method of funding research into remediation.

5.1. An Alternative Approach

This is not an argument to reject the Landfill Tax but to point out that it has serious weaknesses if used in isolation. The UK approach to waste management is piecemeal with different legislation dealing with the levying of funds and the controlling of waste management. The failure to directly link funding with the projects and programmes to improve waste management so that the National Waste Strategy targets are met is a fundamental flaw which can only be overcome by a rational system of waste management.

A Private Member's Bill (Waste Minimisation Bill) to enable local authorities to make arrangements to reduce, prevent or avoid waste in their areas has recently received its second reading. This would enable local authorities to promote waste minimisation by waste prevention schemes which currently they are unable to do. Such schemes will require funding and clause 4 of the Bill states that this will be provided by Parliament. However this begs the question: from where? The Landfill Tax perhaps? It is submitted that this uncertainty undermines any effective project or programme for waste management.

The Municipal Waste Planning, Recycling and Waste Reduction Act of 1988 of Pennsylvania [18] affords a useful example of a government measure designed to give an integrated method of waste management.

The aim of the Act is to dispose or process municipal waste in the county in which it was generated, to control increases in daily volumes of waste and to utilize existing scrap processing and recycling industry expertise. The Act also sets goals for waste reduction and recycling and waste management education thereby testing the efficiency of the operation of the Act.

The Act goes on to impose duties on local authorities requiring them to put forward management plans, to describe the current situation regarding waste in relation to its amount, disposal and recycling. The Act requires local authorities to submit proposals for the future development of waste management with particular reference to the operation of recycling programmes. The Act imposes a duty to ensure availability of adequate disposal capacity and gives power to local authorities to promote and carry out recycling and source separation. It also gives authority for the issuing of waste management licences and similar permits.

More particularly the Act imposes a fee or tax on both landfill and resources recovery facilities. The fee is set for ten years indirectly setting a review date for the effectiveness of the tax. The fee is referred to as a recycling fee which gives an indication as to the purpose of the tax namely to promote recycling which is higher on the hierarchy than disposal or incineration (even if it does produce energy). The tax is at a standard rate of \$2.00/ton.

The Act then goes on to set out the ways in which the monies raised by the fee or tax are to be spent:

At least 70% for grants to local authorities for the development and implementation of recycling programmes, employment of recycling co-ordinators, recycling performance grants, market development and waste reduction studies and their implementation and research conducted by the Department of Transportation. Up to 10% for grants for feasibility studies for waste processing and disposal facilities, except for incineration not connected with recovery of energy.

Up to 30% for public information, public education and technical assistance concerning recycling, waste reduction and litter control, research and demonstration projects, planning grants and inspector programmes.

The Act enables local authorities to apply for grants of up to 80% of the cost to prepare waste management plans to carry out related studies surveys research and analysis

6. Conclusion

The American legislation is comprehensive in its promotion of sustainable waste management. The Act expresses its purpose, imposes duties, grants powers and, most notably, establishes the funding for carrying out its objects.

The UK legislation is in comparison unfocused, piecemeal and disparate. The government have become bogged down by consultation papers. The purpose of

legislation is found, not in the Acts of Parliament themselves but, in white papers and policy documents which are too often expressed in terms of best endeavours and intentions. The legislative provisions are spread over several Acts and in particular there is a clear division between the substantive provisions towards the improvement of waste management and the funding of those provisions, for example see the Waste Minimisation Bill, referred to above. It is this separation which has led to the UK's approach to waste management as being little more than a series of projects funded by a tax concession to appease vociferous environmental organisations rather than a concerted programme.

If the UK Government is serious about meeting the targets set for waste management in the National Strategy and in achieving a more sustainable approach to waste management then funds need to be found and focused to support a comprehensive programme. Where are the funds to come from? The Landfill Tax is the rational answer to this question but the Tax Credit Scheme in its current form is inadequate. To create a rational, sustainable, national waste management programme then nothing short of the whole of the income generated by the Landfill Tax being carefully targeted is required.

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