

Media Briefing

Immediate Release: 03 December 2003

Money to Burn: perverse subsidies for incineration

Introduction

Waste management within the UK is reaching a crisis point. We continue to generate increasing volumes of waste, but European laws are forcing us to abandon landfill as our main method of waste disposal. In any case, landfill space is running out. Incinerators are very unpopular and proving almost impossible to deliver through local planning. Moreover, recycling rates are barely inching forward: the latest Government figures show that recycling has increased by just one per cent a year since 1999.¹ This situation represents a scandalous waste of economic resources and a source of significant environmental damage.

One of the reasons that recycling rates are so low is that incineration currently receives more tax breaks and subsidies than recycling, and is therefore cheaper. Friends of the Earth has calculated this subsidy to be worth between £7.65 and £14.75 a tonne (see Table 4). Much of this investment is driven by energy policy, through exemptions from the Climate Change Levy and the Renewables Obligation. This policy pulls in the opposite direction to waste policy, but it also makes little sense in terms of averting climate change. Recycling saves more energy and creates fewer greenhouse gas emissions than incineration.

In the Pre Budget Report in 2002, the Government promised to consider the case for an economic instrument for incineration following a review of the environmental and health effects of all waste management and disposal options. This report is expected to be published around the time of the Pre-Budget Report 2003, now expected on 10 December.

Friends of the Earth is calling on the Treasury to assess the existing tax breaks and support measures which reduce the cost of incineration. It should also assess the extent to which these subsidies distort market conditions in favour of incineration over recycling. Friends of the Earth's research, commissioned from Eunomia Research and Consulting Ltd, contributes to this debate.²

Main research findings

The research finds that the price of incineration is artificially low in comparison to recycling for four reasons:

- The price of incineration does not adequately reflect the negative costs to the environment and health (such as the costs of pollution, impact on local house prices and area and

greenhouse gas emissions). When these costs are given a monetary value, incineration is associated with negative costs of between -£5.86 and -£17.46 a tonne according to two recent studies (see Table 1).³ The exact costs depend on which fossil fuel, if any, is displaced by the energy produced by incineration.

- The price of recycling is not adjusted to reflect its benefits (such as jobs created and energy saved). The benefits of recycling various materials are shown in Table 2 for several materials. For example, recycling paper brings benefits of between £26.4 and £521.50 a tonne. Recycling ferrous metal (e.g. steel, iron) brings benefits of between £49 and £3239 a tonne while recycling non-ferrous metal (e.g. aluminium, copper) brings benefits of between £315.1 and £5257 a tonne.
- Incineration receives tax breaks and subsidies from a variety of sources including energy policy, packaging regulations and the private finance initiative.

Energy policy - incineration gets tax breaks and subsidies amounting to £3.30 a tonne from Climate Change Levy exemptions, Renewables Obligation and CHP allowances. Gasification and pyrolysis, newer forms of thermal treatment for waste, receive £8.40 a tonne and £4.80 a tonne respectively from the Renewables Obligation. There are 16 operating municipal and industrial incinerators registered to receive the Climate Change Levy exemptions. In total, they receive almost £5 million subsidy through these exemptions alone.

Packaging regulations - incineration receives further subsidies from packaging recovery notes (PRNs). These are compliance certificates which provide evidence that producers and retailers are meeting their targets for recycling and recovery of packaging. PRNs are issued by the operators of recycling or energy from waste schemes. The average PRN price for packaging sent to energy recovery in 2002 was £22.90 a tonne. This translates into £4.35 for each tonne of mixed waste incinerated⁴.

- Recycling does not receive tax breaks or subsidies for the energy which is saved. For example, recycling aluminium saves 95% of the energy required to manufacture it from raw materials. If recycling aluminium received financial support equivalent to the support that incineration receives for generating energy, then it would receive £622 a tonne. See Table 3 for other examples.

It is clear that a perverse situation exists whereby the energy saved through incineration is treated more favourably, in economic terms, than the energy saved through material recycling.

Friends of the Earth is calling on the Government to level the playing field between incineration and recycling:

1. Increase economic support for recycling

If the Government is to maintain existing price supports and exemptions for 'renewable energy', including energy from residual waste treatments then, to be consistent, some form of equivalent support for recycling and composting ought to be implemented.

Table 2 calculates the levels of support for recycling that would be needed. It is calculated by taking the figures for the energy saved by recycling and attributing to this the costs savings that renewable energy (including energy from waste) is granted for displacing fossil fuels.

The effect on a typical tonne of recyclables collected on a kerbside round would be to increase the revenue from materials sales by somewhere between £40 and £50 depending upon materials mix.

The Government currently subsidises the recycling of municipal waste by £29 a tonne through the Waste Minimisation and Recycling Fund.⁵ However, the Government has set targets for recycling to increase to 25% by 2005. In addition, municipal waste arisings are also increasing by around 2.5% a year. Therefore, by 2005 we should be recycling at least 7.4 million tonnes. This suggests that the Government needs to provide direct subsidies for local authority recycling (based on £40-50 a tonne) by between £296 million and £370 million a year. This is equal to an additional £182m – £256m a year.

2. A tax on incineration

There would certainly appear to be a rationale for a tax on incineration. Existing energy policy works to internalise the benefits associated with energy recovery. However, as our research has shown, incineration has its negative external costs as well (see Table 1). Taking account of these costs would suggest that a tax on incineration of around £10 per tonne is justified.

The fact that emissions from plant vary so much with the specification of flue gas emissions control also makes clear the rationale for tighter implementation of emissions standards or for including incineration within a wider tax or emissions trading scheme for key emissions such as NO_x, SO_x and particulates.

Tables of information

Table 1: External costs of incineration (£/tonne)

Form of incineration	Energy displaced*	Cost	Mid-point cost	'Average' cost
Incinerator with 20% energy recovery, excluding post-combustion materials recovery (no pollutant emitted at levels higher than the latest EU Incineration Directive) [Hogg et al 2000]	High UDCs**, displacing average mix	20.27	-15.42	-5.86
	High UDCs, no displacement	-51.03		
	Low UDCs, displacing average mix	7.37	3.71	
	Low UDCs, no displacement	0.05		
Meeting latest EU Incineration Directive, CHP plant, 83% efficiency [COWI 2000]	Displacing oil	11.84	-2.86	-17.46
	No displacement	-17.56		
Meets previous EU Incineration Directive, electricity only, 25% efficiency [COWI 2000]	Displacing oil	-27.61	-32.05	
	No displacement	-36.48		

* Incineration has lower environmental costs if it displaces fossil fuels, especially coal (a very dirty fuel) than if it represents a new source of energy or displaces other renewable forms of energy.

** High and Low Unit Damage Costs (UDCs) relate to high and low values used for UDCs for different pollutants. In calculating the high figures, all UDCs were assumed to be at their high values.

Table 2: External Costs / Benefits from Recycling Different Materials in the Household Waste Stream (£/tonne).⁶

Recycling	Low estimate	High estimate
Ferrous	49	3239
Non-ferrous	315.1	5256.9
Glass	61.2	1947.1
Paper	26.4	521.5
HDPE plastic	41.1	460.2
LDPE plastic	15.4	92.8

Table 3: Cost of support per tonne of material recycled based on energy saved.

Material	Energy saved per tonne recycled ⁷	Cost of support per tonne recycled
Aluminium	53,000 kWh	£622
Textiles	15,000 kWh	£217
Steel	4,700 kWh	£102
PET		£121
HDPE		£34
Paper		£41
Glass	900 kWh	£17

Table 4: Available support for energy from waste incinerators.

Source of support			£ Per tonne
Climate Change levy exemption			1.00
CHP			1.00
Capital allowances			Not estimated
Renewables Obligation	Pyrolysis 2.4 – 7.2	Mean 4.8	Range 1.3 – 8.4
	Gasification 6.0 – 10.8	Mean 8.4	
	Incineration 0.9 – 1.7	Mean 1.3	
Packaging regulations			4.35 ⁸
NFFO contracts			Not estimated
PFI credits			Not estimated
TOTAL			7.65 – 14.75

References

- 1 DEFRA, Municipal Waste Management Survey 2001-2.
- 2 Eunomia Research and Consulting Ltd, 120 Cotham Brow, Bristol, BS6 6AR, UK. Friends of the Earth's full report based on Eunomia's research is available.
- 3 COWI (2000) A Study on the Economic Valuation of Environmental Externalities from Landfill and Incineration of Waste, Final Report for DG Environment, European Commission; Hogg et al (2000) Beyond the Bin: The Economics of Waste Management Options, Wastewatch.
- 4 Based on average PRN price during 2002: <http://www.letsrecycle.com/prices/prnArchive.jsp>. Packaging is estimated to be 19% of the municipal waste stream, therefore PRNs are paid for 19% of each mixed tonne of waste incinerated.
- 5 The Waste Minimisation and Recycling Fund amounts to £114m in 2003-4. The latest available recycling data from Defra indicates that 3.9 million tonnes of waste was recycled in 2001-2. See footnote 1.
- 6 Hogg et al (2000) Beyond the Bin: The Economics of Waste Management Options, Wastewatch.
- 7 GEMIS Database (maintained by Oko Institut, Darmstadt, Germany) for metals other than steel; IISI Life Cycle Inventories for steel; and Smit, A, K Brown, S Ogilvie, K Rushton and J Bates (2001) Waste Management Options and Climate Change, Final Report to the European Commission, DG Environment, July 2001.
- 8 Based on average PRN price during 2002, see note 4.