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Friends of the Earth

Briefing

Landfill Allowance Trading Scheme

Councils must meet targets for reducing the amount of biodegradable waste they send to landfill or they face big fines under the Landfill Allowance Trading Scheme (LATS). In the face of LATS and increasing landfill prices councils are scrambling to find alternative ways to deal with our rubbish.

Some authorities are turning to what they hope might be ‘quick fixes’ to meet their allowances, such as incineration and large-scale biological treatment of household waste. However, there are more sustainable ways local authorities (LAs) can choose to meet their LATS targets. The alternatives to incineration are cheaper, more flexible, quicker to implement and best for the environment.

This briefing explains how LATS works and the best way for councils to meet these targets, both financially and environmentally.

Friends of the Earth, 26-28 Underwood Street, London N1 7JQ
Tel: 020 7490 1555 Fax: 020 7490 0881 Website: www.foe.co.uk

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EU Landfill Directive

Disposal of biodegradable waste to landfill contributes to climate change through the release of methane, a powerful climate change gas. There are many other problems associated with landfill including leaching (the leaking of potentially toxic liquids into soil and groundwater), negative effects on human health and the waste of valuable resources.

The European Landfill Directive was introduced to tackle these concerns. It obliges member states to progressively reduce the amount of biodegradable municipal waste (BMW) which is landfilled.

It sets reduction targets for three target years:

- First target year 2009/10 - reduce landfilling of BMW to 75 per cent of 1995 levels
- Second target year 2012/13 - reduce landfilling of BMW to 50 per cent of 1995 levels
- Final target year 2019/20 - reduce landfilling of BMW to 35 per cent of 1995 levels

The government may receive fines from the EU for missing these targets.

The Directive aims "to prevent or reduce as far as possible negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect, as well as any resulting risk to human health, from the landfilling of waste, during the whole lifecycle of the landfill".[1]

Glossary

Biodegradable municipal waste (BMW) - waste from households and commercial activities that is capable of undergoing biological decomposition. Food waste and garden waste, paper and cardboard are all classified as BMW.

Municipal solid waste (MSW) - waste collected by or on behalf of a local authority (LA). It is mostly household waste but can include some commercial and industrial wastes. About 68 per cent of MSW is biodegradable.

Waste disposal authority (WDA) – an LA charged with providing disposal sites to which it directs the waste collection authorities for the disposal of controlled waste, and with providing civic amenity facilities. In England these are the County Councils and Unitary Authorities. In London some boroughs operate together in joint waste authorities and some are independent waste authorities in their own right.

Landfill Allowance Trading Scheme

LATS was introduced by the government in the 2003 Waste and Emissions Trading (WET) Act[2] to help the UK meet its Landfill Directive targets. The scheme will penalise LAs that exceed their given allowances for landfilling BMW.

Note that the LATS scheme – and the fines that may be levied by the government on local authorities – is a creation of the UK Government. Any EU fines that might be levied if the Government fails to meet its Landfill Directive targets will be levied on the UK Government, **not** local authorities.

The total amount of BMW that is allowed to be landfilled in the UK was divided up between England, Wales, Scotland and Northern Ireland. Separate regulations to make the scheme work are in place in each nation. The main difference between the four schemes is that trading of allowances between LAs is permitted only in England and Scotland.

How does LATS work in England?

The government has allocated each LA an allowance in tonnes for the amount of BMW it can send to landfill. The allocation reduces progressively year-on-year until 2020.[3]

LAs are allowed to trade their allowances with other authorities if they feel they have more or fewer allowances than they need (though they do not have to trade them). They can also ‘bank’ the allowances for future years, or ‘borrow’ up to five per cent of their future allowances for earlier use. The allowance was shared between the authorities using waste data from 2001/2, though the overall target is a reduction from the 1995 total.

Within each scheme year (1 April – 31 March), authorities will be able to landfill BMW up to the level of allowances held. A single landfill allowance permits an authority to landfill one tonne of BMW. It is assumed that each tonne of MSW contains about 0.7 tonnes that is biodegradable (68% of MSW).

After 2010, LAs will be fined £150 per tonne if they landfill more than their allocation without having bought extra allocations from other WDAs.

The allowances allocated to each waste disposal authority are recorded in the Electronic Register of Landfill Allowances at http://lats.defra.gov.uk/Default.aspx?Menu=register&Module=publicRegister/registerMain

The Environment Agency monitors the amount of BMW sent to landfill in any year by each WDA. WDAs report the tonnage of waste collected, sent to landfill and diverted from landfill four times a year via a web-based system called 'WasteDataFlow'.

To work out how much biodegradable waste each WDA has landfilled, the Environment Agency calculates the biodegradable component of the MSW each WDA has sent to landfill. This involves calculating the proportion of biodegradable waste that has been diverted from landfill, based on the information provided by the WDA and assumptions on the proportion of biodegradable waste in different waste types. These proportions range from card, paper and putrescible (green) waste at 100 per cent (ie all of this waste will be biodegradable), through footwear, furniture and textiles at 50 per cent, to glass, plastic and metal waste at zero per cent (ie none of these wastes will be biodegradable).

The amount of BMW the WDA has diverted from landfill is then deducted from the total amount of BMW collected. The total BMW is deemed to be 68 per cent of municipal waste collected (although it is a common misconception of councils and media that LATS applies to all of MSW).

Target years

Those years when the Government must meet EU targets are called 'target years'. In these years councils are not allowed to carry over allowances to the following years. Councils are also barred from banking out of a target year or the year before.

2009/10 is the first target year. Although allowances are currently plentiful and cheap, councils will not be allowed to carry over accumulated allowances into the 2010 – 2013 period.

Landfill Tax

Landfill tax is paid on top of normal landfill fees by businesses and LAs that want to dispose of waste using a landfill site. It is designed to encourage businesses to produce less waste and to use alternative forms of waste management. Landfill Tax and LATS are two separate schemes.

The standard rate is £24 per tonne in the 2007/08 tax year. The landfill tax accelerator means that this rate will increase by £8 per tonne each year from April 2008 and by 2010 the landfill tax will be £48 per tonne.

How councils can achieve LATS targets without incineration

One method of meeting LATs allowances is to burn residual waste in an incinerator. Councils often see building an incinerator as an easy, well established option, which doesn't have the complexity of setting up a really effective recycling and composting scheme. This view is often influenced by those waste industry consultants that tend to recommend incineration. Around 30 councils are looking at incineration as a way of dealing with BMW.

However, incineration is not as easy for councils as the industry likes to suggest. It is often very difficult to get planning permission for incinerators, as they often face intense local opposition. Incinerators take around nine years to plan and get built and often much longer. Therefore there is not time to build incinerators before councils start being fined for landfilling too much biodegradable waste in 2010. By choosing incineration councils face paying these fines combined with landfill charges - a much higher cost than adopting non-incineration solutions.

There are many other problems with incinerators. They generate energy inefficiently - incinerators that generate electricity produce more greenhouse gases than gas fired power stations. They are very expensive to build, often costing over £100 million. They require long contracts of around 25-30 years and need a minimum of rubbish to operate. They also produce pollution and toxic ash.

In contrast, the methods described in the next part of this briefing are cheaper, quicker to build and more flexible. They are also the best solutions for dealing with waste in terms of climate change. There is a lack of awareness and understanding of these alternatives, which offers activists an opportunity to engage with their councils to promote them.

Weekly food waste collections

Separate food waste collections offer the biggest potential for improving recycling rates, meeting targets for reducing how much we landfill and reducing the pressure for new incinerators. Bristol was the UK's first city to offer food waste collections to all residents. When the collection was introduced the recycling rate jumped from 18 per cent to 37 per cent in one year.

In food waste collection schemes, householders are provided with a small caddy bin to keep in their kitchen and a larger bin to keep outside. After collection the food can be treated biologically. This means it is broken down by the action of micro-organisms, either aerobically (in the presence of oxygen) by composting or anaerobically (in the absence of oxygen) by anaerobic digestion (AD). The residue remaining after these processes can be used as a soil conditioner. These are the best treatments for food waste and other biodegradable waste in terms of climate change.

AD has the advantage of also generating 100 per cent renewable energy exclusively from the biomass portion of waste,[4] and it has been found to offer higher net carbon savings than composting[5] by offsetting fossil energy generation. The anaerobic digestion process is very similar to anaerobic breakdown of organic waste in landfill sites but under controlled conditions. For more information see the briefing on AD at http://www.foe.co.uk/resource/briefings/anaerobic_digestion.pdf.

The new Waste Strategy for England, published in May 2007, strongly supported collecting food waste for treatment by AD,[6] stating “AD has significant environmental benefits over other options for food waste” and therefore "the government wishes to encourage more consideration of the use of AD both by LAs and businesses."

As well as cutting waste, increasing recycling and tackling climate change, weekly food collections also help counter criticisms of fortnightly waste collections, which largely centre round kitchen waste. Removing food waste from bins reduces smells and vermin associated with fortnightly rubbish collections.

Garden waste collections

Garden waste makes up around a fifth of household waste, so is another big fraction of our waste which can be diverted from landfill.

Introducing a free garden waste collection can increase the total amount of waste collected, as some households will stop composting their garden waste at home and will instead put it out for the council to collect.

Therefore, in our view, councils should first promote home composting of garden waste through subsidised or free composting bins and education programmes. They can then introduce a paid collection service of garden waste for treatment with windrow composting. Local brown field sites can be used for small scale composting, and compost can be sold or offered free to local residents and businesses.

Why keep food and garden waste separate?

Some councils collect food and garden waste together in the same bin. This is not ideal as research has shown that the cheapest way to treat separately collected garden waste[7] is open air windrow composting. However, this method cannot be used to treat food waste as food waste has to be treated in an enclosed facility, which is more expensive. Collecting food and garden waste together therefore means that it all has to be treated in an enclosed facility.

Although enclosed windrow composting and in-vessel composting are suitable for treating food waste, it is best to use AD, as this will also generate 100 per cent renewable energy.

Improving recycling schemes

As well and food and garden waste, cardboard, paper and natural textiles are biodegradable and can be diverted from landfill via kerbside recycling collections. Recycling saves energy, reduces raw material extraction and combats climate change. The vast majority of studies have found that recycling our rubbish is better for the environment rather than incinerating or landfilling it.

Most households now have kerbside collections of recycling and the number of different materials accepted is increasing. For householders, recycling is one of the easiest ways they can reduce their impact on the environment and it is often the first such action they take.

Source separated collection of recyclables

In kerbside collections, materials can either be separated at the roadside into different compartments in the lorry, or collected together and sorted afterwards in a material recycling facilities (MRF).

It has been found that separating materials at the kerbside results in less contamination of recyclables than mixed or 'commingled' systems. A higher proportion of the materials collected can be recycled and cleaner materials are more valuable to reprocessors, generating more revenue when sold. For more information, see the briefing on recycling collections at http://www.foe.co.uk/resource/briefings/recycling_collections.pdf.

Alternate weekly collections

Alternate weekly collection (AWC) usually means that recycling is collected from households in one week and rubbish is collected the next, although some councils collect recycling on a weekly basis. Nearly half of UK councils have adopted this system.

According to the Local Government Association (LGA) all 10 of the councils with the highest recycling rates in the country have adopted AWCs. LAs with AWC have an average recycling rate of more than 30 per cent, for councils without AWC the average is 23 per cent. These figures support the idea that AWCs encourage residents to recycle more of their rubbish.

It is best for local councils to decide whether AWC will be suitable for their area, after consultation with residents and a well-designed education programme. Before fortnightly rubbish collections are introduced, it is important to have weekly food waste collections, which help to avoid smells and flies.

Education

Education is vital to achieving high recycling rates and sending low levels of waste to landfill. Education schemes can take place in schools to raise children's awareness of waste issues and it can be used to motivate householders to recycle.

In order for kerbside recycling schemes to work, households need to be clear about what they can and cannot recycle, as well as why they should recycle. Councils should also promote the use of home composting, local bring banks and household amenity sites as well as opportunities to reduce waste and reuse items where possible. For example, this could include preventing food waste and promoting furniture reuse schemes. Once a scheme is in place it is important to continually reinforce the message. Recycling can be the platform from which many people can be educated about their environment and good citizenship.

Canvassing involves face-to-face conversations with householders on their doorstep, in order to promote recycling services and encourage residents to recycle. This is a very successful technique - Devon Waste Partnership found canvassing led to a 20 per cent increase in the tonnage of recyclables collected.

Case study - Rotherham, Yorkshire

The 'Taking Home Action on Waste' (THAW) project, run by Waste Watch in partnership with Rotherham Metropolitan Borough Council, was established in 2005 with the aim of using school based waste education to encourage children to reduce, reuse and recycle at home and to persuade their families to join in. This is done through assemblies and lessons, following which children are asked to complete a short 'homework' assignment.

In the first 18 months of the project children's knowledge about waste greatly increased and they were able to name specific examples of ways in which their waste management behaviour at home had become more sustainable. In addition, the programme had additional impacts in the area covered by the project:

• Recycling set out rates increased by around 7 per cent.

• Paper recycling (blue bag) tonnages increased by around 8 per cent and blue box tonnages (cans, glass & textiles) by around 12 per cent.

• The amount of waste left over after recycling (known as residual waste) reduced by an average of 4.5 per cent

Case study - Seattle, USA

Seattle's recycling rates dropped from a high of 44 per cent in 1995 to 38 per cent in 2001 due to a decrease in education funding. With increased funding to a total of $450,000, the recycling rate returned to 44 per cent in 2005. The city saves $4.4 million a year by recycling and reselling materials instead of paying to dump it at landfills.

Paying the real cost of contamination

It is cost-effective to run a good education scheme as it leads to increased recycling, saving money which would have been paid sending the rubbish to landfill.

Educating people on what materials they are able to recycle in their kerbside collection scheme and which containers they should use for each material means that fewer of the wrong sort of items are mixed up with the recycling. With less contamination, more money is paid to the council for the recyclable materials and less rubbish needs to be landfilled.

Mechanical Biological Treatment (MBT)

By implementing the systems and treatments described above, the amount of residual waste collected by councils will reduce significantly. The quantity of this waste will further reduce over time, ruling out large and inflexible technologies such as incineration.

The best way to treat this remaining waste in terms of the environment, and in particular climate change,[8] is by mechanical biological treatment (MBT). MBT should occur in small, localised treatment plants to minimise waste transport.

In an MBT facility, the waste goes through two processes, though the order can vary:

(i) machinery is used to mechanically remove any remaining recyclable waste still left in the waste stream (e.g. metals, plastics, glass).

(ii) the waste is composted or anaerobically digested. This makes the waste biologically inactive so it can be landfilled without releasing methane.

If the residue is clean enough it can also be used for land reclamation on brownfield sites, landfill restoration and as a soil additive.

Landfilling the MBT residue will not count towards LATS targets for landfilled BMW, as long as the biological activity has been reduced sufficiently to meet Environment Agency requirements. Some councils may propose to burn the MBT residue as a 'Refuse Derived Fuel' or 'Solid Recovered Fuel'. Friends of the Earth does not support this - please see our briefing on MBT for more details (link over page).

Conclusion

The solutions in this guide can be implemented quickly, within 12 – 18 months, and they have short term contracts of 7 – 10 years. They are flexible and modular so can be scaled up and down, allowing capacity to be adjusted to meet demand. High recycling and composting followed by MBT is the best way to treat waste in terms of climate change and running these systems costs less than building an incinerator.

Further information

LATS

Allowance trading and borrowing is managed by Defra:
http://www.defra.gov.uk/environment/waste/localauth/lats/index.htm
http://www.defra.gov.uk/environment/waste/localauth/lats/pdf/lats-leaflet-0405.pdf

The Environment Agency is the body with statutory responsibility for determining the compliance of WDAs with their LATS targets:
http://www.environment-agency.gov.uk/business/1745440/444663/landfill/1764524

Incineration

'Dirty Truths' briefing: http://www.foe.co.uk/resource/briefings/dirty_truths.pdf

'Up in Smoke' briefing: http://www.foe.co.uk/resource/media_briefing/up_in_smoke.pdf

Food waste collections

'Food waste collections' briefing: http://www.foe.co.uk/resource/briefings/food_waste.pdf

Action guide to lobby your council:
http://www.foe.co.uk/resource/action_guides/food_waste.doc

Anaerobic digestion

'Anaerobic digestion' briefing:
http://www.foe.co.uk/resource/briefings/anaerobic_digestion.pdf

Information on Greenfinch's AD plant in Ludlow, which is open to visitors:
http://www.greenfinch.co.uk/ludlow.html

Composting

New Earth Solutions - composting and MBT plant in Dorset:
http://www.newearthsolutions.co.uk/

10 reasons to get composting
http://www.foe.co.uk/living/poundsavers/growing_concerns/compost.html

Recycling

Campaign for Real Recycling: www.realrecycling.org.uk

'Recycling collections' briefing:
http://www.foe.co.uk/resource/briefings/recycling_collections.pdf

MBT

'MBT' briefing: http://www.foe.co.uk/resource/briefings/mchnical_biolo_treatmnt.pdf

Global Renewables, Lancashire:
http://www.globalrenewables.com.au/en/development/lancashire-united-kingdom/

Education

Step by Step Guide to Door-to-Door Canvassing
http://www.wrap.org.uk/document.rm?id=3501

Waste Watch motivate people to change their behaviour towards waste through education and training, marketing communications and research and evaluation:
www.wastewatch.org.uk

Best practice examples

Newport Waste Savers is a community project that operates Newport's kerbside recycling scheme, with an emphasis on education: http://www.wastesavers.co.uk/

Presentation on Somerset Waste Partnership's approach to meeting LATS targets without incineration: http://www.foe.co.uk/resource/event_presentations/somerset.pdf

Somerset recycling website: www.recyclesomerset.info

General

English Waste Strategy 2007: http://www.defra.gov.uk/environment/waste/strategy

Toolkits & Good Practice on recycling collections and communications, aimed at LAs:
http://www.wrap.org.uk/local_authorities/toolkits_good_practice/index.html

Appendix

How to calculate LATS allocations

In 2001/2 Barnsley Metropolitan District Council (BMDC) collected 144,354 tonnes of MSW of which 131,676 was landfilled.

It was assumed that 72.39 per cent of the MSW was biodegradable and that 95,326 tonnes of BMW was landfilled.

Defra gave each authority a base year figure that was 99.66 per cent of the BMW they landfilled in 2001/2. BMDC's was 95,002 tonnes of BMW.

The allowances for the target years were shared out between authorities in proportion to the total MSW produced in 2001/2 and the base figure is only used to determine the transition up to 2009/10. BMDC's share of the 1995 BWM that was landfilled was 74,512 tonnes.

BMDC's landfill reduction targets:

First target year (2009/10) - 55,934 tonnes allocated (75 per cent of 74,512)

Second target year (2012/13) - 37,256 tonnes allocated (50 per cent of 74,512)

Final target year (2019/20) - 26,069 tonnes allocated (35 per cent of 74,512)

References

1 Council Directive 99/31/EC of 26 April 1999, http://ec.europa.eu/environment/waste/landfill_index.htm

2 Waste and Emissions Trading Act 2003, http://www.defra.gov.uk/environment/waste/wetbill/index.htm

3 The allocations for each LA in England can be found on Defra's web site: http://www.defra.gov.uk/environment/waste/localauth/lats/index.htm

4 Friends of the Earth (2006), "Dirty Truths: Incineration and Climate Change" http://www.foe.co.uk/resource/briefings/dirty_truths.pdf

5 ERM, 2006, "Carbon Balances and Energy Impacts of the Management of UK Waste Streams Energy", http://www2.defra.gov.uk/research/project_data/More.asp?I=WR0602

6 DEFRA, 2007, "Waste Strategy for England 2007", http://www.defra.gov.uk/environment/waste/strategy/

7 Eunomia, 2007, "Dealing with food waste in the UK", Dr Dominic Hogg et al, http://www.wrap.org.uk/document.rm?id=3603

8 Eunomia (Consultants for Friends of the Earth), 2006, "A changing climate for energy from waste?", http://www.foe.co.uk/resource/reports/changing_climate.pdf