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# WASTE POLICY: AN OVERVIEW

This briefing has been prepared at the request of the Transport and Environment Committee. The European context for waste policy is described, together with the framework for future actions set by the European Commission's 6th Environmental Action Programme, the present Spanish Presidency of the Council of Europe, and the Commission's own work programme for 2002. The major components of EU waste law are outlined, together with their implementation in Scotland, and the future development of domestic waste policy under the National Waste Strategy. The final section of the paper considers waste management in Germany.

# WASTE POLICY: AN OVERVIEW

# INTRODUCTION

In 1998, approximately 15 million tonnes of waste was collected in Scotland: 3 million tonnes of household waste; 2 million tonnes of commercial waste; 7 million tonnes of industrial waste and 3 million tonnes of waste collected by local authorities. Local authorities reported that just 110,000 tonnes or 3.5 per cent of waste they collected was recycled or composted. In 2000/01 figures from Audit Scotland show that the proportion recycled had increased to 6 per cent.

The majority of waste in Scotland is disposed of in landfill, with over 250 landfill sites in the country. These range in capacity from small rural sites taking less than 5,000 tonnes per annum to major operations taking over 150,000 tonnes per annum. However, advanced landfill sites incorporating recycling facilities, composting or energy recovery from waste are limited in number.
In 1998 Scottish local authorities reported that they had collected about 3 million tonnes of waste. Over 90% of this was landfilled. Landfill operators showed that around 12 million tonnes of controlled waste was landfilled, with 2 million tonnes being commercial, and 7 million tonnes industrial. This illustrates Scotland's position at the lower end of the 'waste hierarchy', with a heavy dependence on disposal.

There are a number of key influences on waste policy and practice in Scotland. At the European level, a number of directives put in place the broad framework and targets for implementation at the Scottish level. The Scottish Executive is responsible for translating this where appropriate into legislation and policy programmes for implementation. The Scottish Environmental Protection Agency (SEPA) has the statutory responsibility to prepare and review the National Waste Strategy[1], and they are the regulatory authority. It has direct powers to ensure human health is safeguarded, and works with local authority planning functions to ensure that the network of water management facilities is provided. They also undertake research, and investigation of new technologies, and provide advice on policy to central government.

This paper outlines European policy and legislation, the Scottish legislative context for waste, and then outlines the German approach to this matter.

[1] Under Section 92 of the Environment Act 1995

# THE EUROPEAN CONTEXT

*"Without new initiatives, waste volumes in the Community are projected to continue to rise in the foreseeable future. In addition to requiring valuable land space, the management of wastes releases numerous pollutants to our air, water and soil including greenhouse gas emissions from landfills and waste transportation. Waste also often represents a loss of valuable resources, many of which are scarce and could be recovered and recycled to help us reduce our demand for virgin raw materials"*[2]

## BACKGROUND

The Community strategy for waste management was first drawn up in September 1989. The Commission outlined the main points of that strategy namely:

- Prevention or reduction of waste at source as the highest priority
- Promoting recycling
- Harmonising standards for incineration and landfill
- Tightening up on existing rules on the transport of waste
- Cleaning up sites that have been polluted by waste

In July 1996 the Commission presented a new strategy. The strategy confirmed the hierarchy of principles established by the first strategy: waste avoidance as top priority, followed by recovery and finally safe disposal of waste. A new feature of the 1996 strategy was the idea of "producer responsibility".

This section outlines the policy and legislative framework at the European level. This is the framework which guides the Scottish approach to waste. The section is split into two parts – firstly, the policy framework set by the European Commission and the presidency of the Council of the European Union is discussed. These give an indication of likely new areas for legislation that might arise. The more immediate priorities are drawn out by examining the European Commissions work programme for 2001-2002. Secondly, existing European legislation is described.

## POLICY PRIORITIES

### 6TH ENVIRONMENTAL ACTION PROGRAMME

At the most strategic level, the European Commission produce Environmental Action Programmes. Decisions on whether to amend or approve the programmes are taken by the European Parliament through the co-decision procedure. The latest of these is the 6th Environmental Action programme "Environment 2010: Our Future, Our Choice", that covers the period 2001-2010.

Before the 6th environmental action programme, in November 1999 the Commission undertook a Global Assessment of the 5th Action Programme, based on a report by the European Environment Agency on the state of the environment. The Global Assessment suggested environmental policy in the EU has been

[2] Environment 2010: Our Future, Our Choice – 6th environmental action programme, European Commission, 2001

mixed in its effectiveness. The assessment criticised deficient implementation by Member States of EC environmental directives and weak ownership of environmental objectives by stakeholders.

Against this background, the new programme stresses the need for Member States to better implement existing environmental laws, and the Commission announced that it will bring increased pressure to bear on Member States by making implementation failures better known[3].

The programme makes this point specifically in relation to waste, stating:

> *"New waste treatment facilities meet extremely high operating standards that reduce emissions and risks significantly. Yet, much of our wastes still go to older and less well managed facilities, partly due to the failure of Member States to properly implement Community waste legislation."*[4]

Against this background, it is notable that the Commission have taken action against the UK concerning implementation of waste Directives. The case is discussed later in this paper.

The 6th programme prioritises four major areas for action. One of these is 'sustainable use of natural resources and waste'.. In this respect, the programme takes a two-pronged approach.

Firstly, through resource efficiency and management, and secondly through waste prevention and management. In terms of resource efficiency, the programme proposes a decoupling of waste generation from economic growth. The aim is improved waste prevention through better resource efficiency. As a first step towards this, it is proposed that a 'thematic' strategy be developed on the sustainable use of resources. The Commission will develop an analytical framework to help identify which resources (particularly non-renewable resources) are of most concern. In this way, specific policy measures can be developed that help to reduce consumption of these resources and improve recycling rates. The programme suggests that high environmental objectives will promote the competitiveness of European industry.

For wastes that are still generated, the programme would seek:

"…to achieve a situation where:

- the wastes are non-hazardous or at least present only very low risks to the environment and our health;
- the majority of the wastes are either reintroduced into the economic cycle, especially by recycling, or are returned to the environment in a useful (e.g. composting) or harmless form;
- the quantities of waste that still need to go to final disposal are reduced to an absolute minimum and are safely destroyed or disposed of;
- waste is treated as closely as possible to where it is generated."[5]

The current architecture of Community waste policy and legislation comprises three main elements:

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[3] European Commission press release IP/01/102, Brussels, 24 January 2001

[4] Environment 2010: Our Future, Our Choice, sixth environmental action programme, European Commission, 2001.

[5] Ibid

- framework legislation on waste definitions, site permitting, waste shipments controls etc;
- legislation governing the operating standards of waste facilities such as landfills and incinerators;
- legislation targeted at specific priority waste streams such as end-of-life vehicles with the primary aim of increasing recovery, and in particular recycling levels and reducing the hazardousness of these wastes.

These measures are largely targeted at improved waste management, but the new programme suggests that a shift in this focus might now be necessary:

> *"Whilst the above-mentioned approach has been successful in improving the standards of waste management, it has so far failed to reduce the rising tide of waste volumes. The focus now needs to be on waste prevention both in quantitative (i.e. volumes) and qualitative (i.e. hazardousness) terms. For policymakers, this is one of the most challenging aspects of the waste issue. It requires the decoupling of waste generation from economic growth."*[6]

It is suggested that action to prevent waste should focus upon:

- Findings ways to extend product life-spans
- Using less resources in products
- Shifting to cleaner, less wasteful production processes
- Influencing consumer choice and demand in the market place in favour of less wasteful products and services.

The action proposed is to integrate waste prevention objectives and criteria into the Community's Integrated Product Policy and the Community Strategy on Chemicals. This is discussed in the section on this matter below.

## SPANISH PRESIDENCY

The Council of the European Union, formerly known as the Council of Ministers, comprises representatives of each Member State at ministerial level, who are authorised to commit the Government of that Member State. The Presidency of the European Union rotates on a six-monthly basis. Under this system, each Member State in turn presides over the EU Council for six months in the order established by the Council Decision of 1st January 1995.

Spain will hold the Presidency of the European Union for the first six months of 2002 followed by Denmark. The presidency priorities give an indication of the policy areas for which progress will be sought through the Council of the European Union during those six months.

Areas highlighted for progress that could have an impact on waste include formulation of Community policy for integrated protection of soil.

> *"Europe's existing environment policy on air and water quality needs to be rounded off with a policy on soil quality."*

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[6] Ibid

The Spanish Environment Minister also indicated that such a policy would have to be formulated taking due account of other sectoral policies such as agriculture, transport, water and waste, "in an integrated approach".[7]
Spain also wants to promote the approval of a strict and effective Community legal framework for environmental liability to ensure the effective repair of environmental damage and encourage more environmentally friendly behaviour

## EUROPEAN COMMISSION PRIORITIES

Within the framework of the 6th environmental action programme, the European Commission's priorities for the Environment 2001 – 2002 are laid out in the Directorate General Environment management plan. Its mission statement for 'sustainable resources' is,

> *"To develop and implement policies designed to ensure sustainable management of natural resources and wastes – with particular emphasis on resource efficiency and lifecycle impact of products, consumption pattern, de-materialisation of the economy and waste prevention."*[8]

The tasks that the management plan lays out in pursuit of this mission statement are:

- to implement IPP,
- to develop a thematic strategy on the sustainable use of resources, especially non-renewable resources,
- to improve waste prevention initiatives,
- to develop a thematic strategy on waste recycling.

The plan also identifies challenges, and these are largely associated with building political support and agreement. These include analysis of the carrying capacity of the environment, implementing measures for the decoupling of resource use from economic growth, and the extensive use of economic instruments.

## EUROPEAN COMMISSION GREEN PAPER ON INTEGRATED PRODUCT POLICY (IPP)

Another major initiative which has a bearing on EU waste management policy is the development of an Integrated Product Policy.

### What is an IPP?

Integrated Product Policy is an approach which seeks to minimise the life cycle impacts of products. It covers all the stages in the product life cycle from the extraction of natural resources, design, manufacture, assembly, marketing, distribution, sale and use to their eventual disposal as waste or recycling/recovery. The objective is as far as possible to close the cycle, minimising waste and exploitation of virgin resources. The core idea is that integration of environmental impacts at each stage of the life cycle of the product is essential and should be reflected in the decisions of stakeholders.

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[7] Speech by Minister for Environment EP Committee on the Environment, Public Health and Consumer Policy (Brussels, 22 January 2002)

[8] European Commission DG Environment Management Plan 2001-2002, p10

IPP focuses on key stages in the product life cycle which strongly influence environmental impacts: eco-design of products, informing consumer choice, and introducing the polluter pays principle to product prices.

### Development of a European IPP

There are a range of policy measures available to control product life cycles: economic instruments, substance bans, voluntary agreements, environmental labelling and product design guidelines. The European Commission produced a Green Paper in 2001[9] which looks at how these measures can be used to develop a Europe-wide integrated product policy. The Green Paper sets out three goals for an EU-wide IPP[10]:

- To encourage consumer demand for greener products. The main way suggested in the Green Paper for achieving this is through eco-labelling
- To encourage business to take forward supply of green products. The main approaches suggested are drawing up eco-design guidelines, and by incorporating environmental concerns into market harmonisation measures.
- To use pricing mechanisms to develop markets for greener products e.g. by reducing VAT on eco-labelled products, extending the producer responsibility concept, or using state aids.

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## EUROPEAN DIRECTIVES ON WASTE

This section outlines the directives that influence domestic policy and legislation in the area of waste. There are a number of other EU directives on waste management. The major directives[11] are:

1. The Framework directive (75/44/EEC, 15 July 1975, as amended by 91/692/EEC);
2. Hazardous waste (directive 91/689/EEC, 12 December 1991, as amended by 94/31/EEC);
3. Incineration of hazardous waste (directive 94/67/EC, 16 December 1994);
4. Packaging and packaging waste (directive 94/62/EC 20 December 1994); and
5. Landfill of waste (directive 99/31/EC 26 April 1999).
6. End of life vehicles (directive 2000/53/EC 18 September 2000)

Proposals for a directive on Waste Electronic and Electrical Equipment (WEEE) and on the Restriction of Hazardous substances (ROHS) are at 2nd reading in the European Parliament.

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[9] COM (2001) 68: Green paper on Integrated Product Policy, European Commission, February 2001

[10] IP/01/180: 8th February 2001 Commission adopts green paper on integrated product policy

[11] other Community instruments on waste include directives on transfrontier shipment of waste, Directive 75/439/EEC on the disposal of waste oils, Driective 86/278/EEC on sewage sludge in agriculture and Regulation 2037/2000/EC on the disposal of waste fridges.

## THE FRAMEWORK DIRECTIVE

The 'Framework Directive' of 1975[12] put in place the requirement and framework for Member States to develop their own waste management policies. The waste framework directive laid down general rules that apply to all categories of waste. It required Member States to introduce measures to encourage:

- The prevention or reduction of waste production and its harmfulness, for instance by the development of clean technologies
- The recovery of waste by means of recycling, reuse, reclamation or any process with a view to extracting secondary raw materials or the use of waste as a source of energy.

The directive also required that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment (water, air, soil, plants and animals) or causing a nuisance through odours or noise. The abandonment, dumping or uncontrolled disposal of waste must be prohibited. The self sufficiency and proximity principles were embodied in Article 5 which obliged Member States to establish an integrated and adequate network of disposal installations. Article 7 required Member States to draw up waste management plans i.e. on organised and coordinated system for the disposal of waste.

There have been criticisms of this directive, and a number of directives adopted since then:

> *"…many of the original directives on waste management could be readily criticised for their vagueness. Problems included the lack of clear definitions on key terms, and the imposition of wide and open-ended objectives which are likely to be subject to varied interpretation nationally. The trend has been towards Community initiatives that are drafted with greater precision, and which leave commensurately less discretion to member states. The products of this tendency include the Directives on incineration and on landfill, as well as on package waste."*[13]

It sets out two basic measures that Member states should take to prevent or reduce waste production and its harmful effects:

1. Member states should develop clean technologies which are more sparing in their use of natural resources, together with appropriate techniques for the final disposal of dangerous substances; and

2. Secondly, where waste is produced, secondary raw materials should be recovered from the waste by means of recycling, re-use or reclamation. Where this is not possible, waste should be used as a source of energy.

The directive on waste also contains provisions on the safe disposal of waste without endangering human health and without causing harm to the environment. Included in this is the establishment of an integrated and adequate network of

[12] The Directive on Waste: 75/442/EEC, 15 July 1975, as amended by 91/692/EEC

[13] "EC Waste Law – a Complete Mess?" by Stephen Tromans in Journal of Environmental Law Vol 13 No 2, pg 134

disposal installations, again using the most environmentally appropriate methods and technologies. Action by the European Commission has been taken against the UK for the implementation of this directive, this is described more fully later in this paper. The Commission complained that the waste management plans notified by the UK did not cover the whole of its territory and furthermore that some of the waste management plans adopted did not satisfy the conditions laid down in the directive.

## THE DIRECTIVE ON HAZARDOUS WASTE[14]

The directive on hazardous waste lists wastes which are deemed to be hazardous, and requires that the competent Member state authorities develop plans for the management of those wastes. Those plans should be available to the public. The directive is amended by directive 94/31/EC, which updates the list of hazardous wastes. This directive is also implemented through the National Waste Strategy. Action by the European Commission has been taken against the UK regarding implementation of this directive through the European Court of Justice. This is described later in the paper.

## THE DIRECTIVE ON THE INCINERATION OF HAZARDOUS WASTE[15]

The directive on the incineration of hazardous waste outlines various measures EU Members should implement to prevent or reduce the negative effects on the environment resulting from the incineration of hazardous waste:

1. Prior to accepting waste, incinerator plant operators should have available a description of the waste, including its physical and if possible chemical composition, together with any hazardous characteristics of the waste;
2. Plants incinerating hazardous wastes should achieve as complete a level of incineration as possible. Accordingly, plants should be designed to operate at a minimum temperature of at least 850°C, and stack heights should be calculated in such a way as to safeguard human health and the environment.

The directive also sets emission limits for a large number of gaseous and vaporous organic substances, including compounds of harmful substances, such as mercury, arsenic and lead. The release of such substances should be continuously monitored for compliance with the stipulated emission limits. Where a plant fails to comply with the stipulated emission limits, it should be closed until such time as the competent authorities deem appropriate.

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[14] Council Directive 91/689/EEC of 12 December 1991 on hazardous waste, Official Journal L 377 , 31/12/1991 P. 0020 – 0027 as amended by Council Directive 94/31/EC of 27 June 1994 amending Directive 91/689/EEC on hazardous waste Official Journal L 168 , 02/07/1994 P. 0028 - 0028

[15] Council Directive 94/67/EC of 16 December 1994 on the incineration of hazardous waste, Official Journal L 365 , 31/12/1994 P. 0034 - 0045

## THE DIRECTIVE ON PACKAGING AND PACKAGING WASTE[16]

The directive on packaging and packaging waste outlines principles for the prevention of packaging waste production, or where that is not possible, the re-use of packaging through recycling. It is implemented in Scotland through the National Waste Strategy. Importantly, the directive specified that by 2001, between 50-65 per cent of packaging by weight should be recovered, including 25-45 per cent for recycling.

To facilitate re-use of packaging, the directive also stipulates that Member states must ensure that there are systems for the return and/or collection of used packaging, and the re-use (including recycling) of that packaging. Such systems should be open to both private and public authorities. In addition, to facilitate collection, re-use and recycling, packaging should where appropriate carry clearly visible and legible identification.

The European Commission has proposed a new directive[17] to amend Directive 94/62/EC on packaging waste. The proposal sets new targets for recycling packaging waste to be achieved by member states by 2006 which are significantly higher than those set by the old directive for 2001. The table below shows the new proposed targets:

**Table 1 – Targets for Recycling packaging waste in EU-15 countries**[18]

| | 2001 targets (under Directive 94/62/EC **(%)** | 2006 targets (proposed in COM 2001-729) **(%)** |
|---|---|---|
| Overall recovery | 50-65 | 60-75 |
| Overall recycling | 25-45 | 55-70 |
| Material specific recycling: | | |
| Glass | 15 | 60 |
| Paper and card | 15 | 55 |
| Metals | 15 | 50 |
| Plastics | 15 | 20 |

Action by the European Commission has been taken against the UK regarding implementation of this directive through the European Court of Justice. This is described later in the paper.

## THE DIRECTIVE ON THE LANDFILL OF WASTE[19]

The directive on the landfill of waste sets out measures and procedures to prevent or reduce as far as possible the negative effects on the environment and human health from the landfilling of waste. Some of the requirements of the landfill directive are incorporated into the National Waste Strategy.

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**16** European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, Official Journal L 365 , 31/12/1994 P. 0010 - 0023

**17** COM (2001) 729 Proposal for a Directive of the European Parliament and of the Council amending Directive 94/62/EC on packaging and packaging waste

**18** Commission Press Release: 12th December 2001, *Commission proposes to amend Directive on Packaging and Packaging Waste*

**19** Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste, Official Journal L 182 , 16/07/1999 P. 0001 - 0019

The directive requires that wastes for landfill are classified into one of three categories: hazardous waste; non-hazardous waste; and inert waste. Member States are required to dictate the types of waste to be accepted under each class of landfill, based on both the environmental conditions and the properties of the particular waste.

At the same time, the directive nominates a number of wastes and treatments for waste which should not be accepted in landfills. Wastes which should not be accepted include liquid waste, waste which is explosive or corrosive or flammable, whole used tyres, or hospital or other chemical wastes.
The directive also sets a number of objectives for a reduction in waste going to non-hazardous landfills. These include a reduction in biodegradable municipal waste going to non-hazardous landfills to 75 per cent of 1995 levels by 2004, 50 per cent of 1995 levels by 2007, and 35 per cent of 1995 levels by 2014.

## END OF LIFE VEHICLES DIRECTIVE[20]

Between 8 and 9 million tonnes of waste are generated annually by end-of-life vehicles. Some 25% of the vehicles' weight (shredding residue) is hazardous waste and their shredding releases PCBs, heavy metals, petrol, motor and gear oil, hydraulic fluids, brake fluids and anti-freeze into the environment as the waste is dumped in landfill sites. The shredding residue, which amounts to about 1.9 million tonnes of waste per year, represents up to 10% of the total amount of hazardous waste generated yearly in the EU.

The directive requires that Member States introduce a system of certificates of destruction for end-of-life vehicles which can only be handed over to the last holder and/or owner by an authorised treatment operator as a condition for de-registration of the vehicle. This should allow authorities to control the destiny of end-of-life vehicles. The certificate and the establishment of take-back schemes should encourage the last owner/holder to hand over the end-of-life vehicle to an authorised facility.

The directive sets targets for re-use, recovery and recycling (reprocessing in a production process excluding energy recovery). The target for recycling is 80% by average weight per vehicle and year to be achieved by January 2006. For vehicles produced before 1980, there is a lower target of at least 70%. Re-use and recycling is to be increased to a minimum of 85% by an average weight per vehicle and year by 1 January 2015.

## WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT DIRECTIVE (WEEE)

Waste from electronic and electrical equipment or “WEEE” constitutes around 4% of municipal waste and is forecast to grow by 3-5% per year. Electronic and electrical equipment is one of the largest known sources of heavy metals and organic pollutants in the waste stream.

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[20] Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles, Official Journal L 269 , 21/10/2000 P. 0034 - 0043

Six countries: the Netherlands, Denmark, Sweden, Austria, Italy and Belgium have already adopted domestic legislation on this subject, and Germany and Finland are expected to do so soon. The Commission put forward two proposals for directives to harmonise legislation on WEEE in June 2000.[21]

The WEEE directive is based on the principle of extended producer responsibility. The objective is to encourage environmentally friendly design by making producers financially responsible for their products when they become waste. The Commission proposed that 5 years after coming into force, producers should fund the collection of WEEE from private households and the treatment, recovery and environmentally sound disposal of WEEE.

The proposal allows producers to opt for a collective or individual waste management system for products made after the directive comes into force. The European Parliament favoured individual responsibility, as this would give more of an incentive for companies to innovate in minimising waste[22].

The proposals set a target of collecting 4kg of WEEE per head by 2005. This would be around 25% of WEEE currently produced. The European Parliament report notes that in the UK, "which does not have an advanced recycling culture, and has no WEEE legislation in force as yet, the figure is already 6kg per head because of old for new take back schemes for white goods"[23].

Different targets are also set for recycling the WEEE collected for different types of waste. The highest target is for 75% of large household appliances, with the lowest target of 50% for items containing a cathode ray tube.

A section of the original proposal for the WEEE directive has been hived off into a directive in its own right. This proposal[24] deals with the restriction of the use of hazardous substances (RoHS) in electrical and electronic equipment.

The proposed directive aims to harmonise the laws of the Member States on the restrictions of the use of hazardous substances in electrical and electronic equipment, thus contributing to the protection of human health and the environmentally sound recovery and disposal of these wastes. The substances which are to be banned would also be harmful to the health of people working in the recycling of WEEE.

By 1 January 2007 at the latest, Member States have to ensure that new electrical and electronic equipment does not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and/or polybrominated diphenyl ether (PBDE).

The Environment Council adopted a common position on both these proposals in June 2001. The European Parliament is expected to conclude its second reading

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[21] COM (2000) 347(1) Proposal for a Directive of the European Parliament and of the Council on waste electrical and electronic equipment

[22] see Committee on the Environment, Public Health and Consumer Policy: 2001, *Report on the proposal for a European Parliament and Council directive on electrical and electronic equipment* http://www2.europarl.eu.int/omk/OM-Europarl?PROG=REPORT&L=EN&PUBREF=-//EP//NONSGML+REPORT+A5-2001-0148+0+DOC+WORD+V0//EN&LEVEL=2&NAV=S

[23] Ibid p.57

[24] COM (2000) 347(2) Proposal for a Directive of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment

in plenary in April 2002, which suggests that the directives are likely to be finally adopted in late 2002.

## EUROPEAN COMMISSION INFRINGEMENT ACTION AGAINST THE UK

On 8 February 2000, the European Commission applied for a declaration that the United Kingdom had failed to draw up waste management plans. Specifically, action was brought for:

> *"Failure of a Member State to fulfil its obligations · Infringement of Article 7 of Council Directive 75/442/EEC of 15 July 1975 on waste, as amended by Directive 91/156/EEC, of Article 6 of Council Directive 91/689/EEC of 12 December 1991 on hazardous waste and of Article 14 of Directive 94/62/EC of the European Parliament and the Council of 20 December 1994 on packaging and packaging waste"*[25]

The UK judgement is the first result of 13 actions launched by the European Commission. The Commission argued that the UK did not have sufficient waste management plans (required under Article 7 of Directive 75/442/EEC - the Waste Directive) appeared not to cover the whole of the UK. In addition the Commission claimed that the notified waste management plans did not satisfy the conditions laid down by amended directive 75/442/EEC and Directive 91/689/EEC (the Hazardous Waste Directive), and Directive 94/62/EC (the Packaging Waste Directive. The UK did not dispute its alleged failure to fulfil its obligation. It accepted that it had failed to adapt and or notify waste management plans capable of covering the entire territory of the UK and that the situation is being rectified by replacing local plans with national strategies so as to satisfy the requirements of these directives. The European Court of Justice found that the United Kingdom was in breach of all of these directives. Other cases against the UK for failing to implement Community waste law are pending.

[25] Case C-35/00 – Commission v United Kingdom (2002)

> *"The European Community has for many years taken a broader view of waste policy than simply ensuring safe disposal. As Ludwig Kramer points out, the three principles of waste management (prevention of generating waste, recycling, and safe disposal of waste which cannot be recycled) were developed early on and have been regularly repeated since 1977."*[26]

The provisions of the directive on waste (75/442/EEC) are implemented by UK legislation – the *Environmental Protection Act 1990*, as amended by the *Environment Act 1995*. These acts set out amongst other things the powers and responsibilities of the designated waste regulation authority in Scotland, SEPA. In accordance with the Waste Framework Directive, the acts require any establishment or undertaking which keeps or disposes of waste to obtain a license from SEPA. SEPA is also responsible for preparing Scotland's National Waste Strategy.

Second, the provisions of the directive on hazardous waste (91/689/EEC) are implemented by the Special Waste Regulations 1996, which gives SEPA responsibility for controlling the movement of hazardous waste within Scotland.

Third, the provisions of the directive on packing and packaging waste (94/62/EC) are implemented by the *Producer Responsibility Obligation (Packaging Waste) Regulations 1997* and the *Packaging (Essential Requirements) Regulations 1998*, made under the *Environment Act 1995*. The 1997 regulations make SEPA responsible for registering packaging companies, and for enforcing recovery/recycling targets. The 1998 regulations control the placing of packaging on the market, including maximum concentration levels of heavy metals in packaging.

It is expected that the directive on the landfill of waste (99/31/EC) will lead to a further legislative response, including the enacting of targets for a reduction in biodegradable municipal waste going to non-hazardous landfills, as discussed above.

## SEPA AND THE DEVELOPMENT OF THE NATIONAL WASTE STRATEGY: SCOTLAND

The European Waste Framework Directive was first established in 1975. The Environment Act was first passed in 1990, SEPA was established in 1996. From this time, SEPA took over the enforcement and regulation of waste disposal and treatment and the role of developing the National Waste Strategy - the first time that waste management had been brought together at a strategic level for the whole of Scotland. Previously, that function rested with the district and island councils. The first National Waste Strategy was published for consultation in May 1999

SEPA highlight a number of constraints that will continue to slow down the process of change in waste management. These include:

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[26] "EC Waste Law – a Complete Mess?" by Stephen Tromans in Journal of Environmental Law Vol 13 No 2

- Industry, commercial and public attitudes
- Costs, and lack of investment
- Undesirable perception of waste treatment and disposal sites
- Topography and demography, particularly in rural areas
- Culture of mixed waste disposal, rather than separating out recyclables
- Lack of polluter pays principle to households through their Council Tax Bills or to the commercial sector
- Contractual arrangements with compulsory competitive tendering requiring the minimisation of collection costs
- Landfill tax – has been treated as an additional revenue cost by some local authorities offsetting other expenditure on waste disposal operations. Other local authorities have taken the opportunity to invest in mechanisms to cut down on landfill.
- Poor information
- Fluctuation of recycling markets

In developing the National Waste Strategy SEPA took the view that it was not the mechanism through which specific land use decisions for waste facilities could be developed. This function lies with the Local Authorities as Planning Authorities. The strategy developed by SEPA allows local needs to be taken into account in pulling the strategy together. Accordingly SEPA proposed to develop the strategy through a network of 11 'Waste Strategy Areas' (WSAs). These are amalgamations of local authorities.

> *"This is designed to ensure that decisions about how to meet the requirements of this Strategy are taken locally, that an appropriate network of waste treatment and disposal facilities is established and that local circumstances are taken into account in future development of the overall strategy. The Waste Strategy Areas also provide a framework to facilitate the development of voluntary actions by industry and local authorities. Local authorities are key participants through their role as development control authorities and as waste collection and disposal authorities."*[27]

Each WSA will develop an Area Waste Plan which will form part of the National Waste Strategy, and will be compatible with any national targets or objectives. It was intended that the first round of WSAs be completed by the end of 2000. However, SEPA have indicated[28] that this deadline was reviewed on the basis of recognised complexities of the process and a final deadline of March 2002 was agreed for publication of the draft plans. They anticipate that 8 of the 11 plans will meet this deadline, with 2 meeting an April deadline, and 1 meeting a May deadline. Plan 12 is the National Waste Strategy Report arising out of the integration of the eleven area Waste Plans. Integration will occur in phases until consultation on the drafts is completed and the final Area Waste Plans published. SEPA intends to publish Plan 12 by September 2002.

SEPA state in the National Waste Strategy that,

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[27] National Waste Strategy: Scotland, pg 8, SEPA

[28] Through correspondence, 6 February 2002

*"Where these reports show that progress towards statutory targets is not being achieved, it will be for the Scottish Executive to consider whether further measures, including statutory measures, are needed."*[29]

Also, SEPA point out in the National Waste Strategy that the planning system is the main means by which the provision of an adequate network of waste management facilities can be developed. It will therefore be necessary to take any proposals resulting from the WSAs through the planning process before the commencement of new developments can commence.

On completion of the 11 Area Waste Plans and the National integrated plan SEPA will establish a development programme to support local authorities and to take forward a wide range of issues. Some of these are on-going and include recycling market development, waste minimisation, waste exchanges and public promotion and education campaigns. SEPA will also establish a Futures group to look at the future scenarios for waste and resource management in Scotland. The development of the strategy and the future work will be overseen by a Ministerial grouping of key stakeholders.

Other functions that SEPA undertake in relation to waste include regulation and research. Their regulatory function is to ensure that waste management is carried out in compliance with the legislative framework. They also have a research programme looking at waste management issues.

There are also economic instruments that can be developed. At the UK level this includes the landfill tax, where all operators pay £10 tax per tonne of active (biodegradable) waste, and £2 per tonne for inactive waste. Operators can reclaim the tax to make contributions to projects which benefit the environment (a local authority is not currently a body that can benefit from the scheme). Economic instruments focussed on tax are reserved matters.

The strategy includes targets for waste management, largely from legislative sources through directives and UK legislation. However, it also includes some voluntary targets which it states cannot be required, but should be developed as aspirational targets.

In the area of research, SEPA fund:

- Studies of particular waste streams
- Research and development in order to encourage the prevention or reduction of waste production
- Research into the development of appropriate technologies and the recovery of waste

## KEY PRINCIPLES FOR THE NATIONAL WASTE STRATEGY

Within its overall approach, SEPA's policies are:

- *SEPA supports the principles of the waste hierarchy and will adopt them as part of its decision-making processes.*

[29] National Waste Strategy, pg 36

- *SEPA will develop guidance on Best Practice Environmental Option for waste management.*

The Waste hierarchy provides a framework within which the most desirable waste management options are set out. These are:

- Reduction
- Re-use
- Recovery (including recycling, composting and energy)
- Disposal

Best Practicable Environmental Option (BPEO) is a concept defined by the Royal Commission on Environmental Pollution (RCEP) as:

> *"BPEO is the outcome of a systematic consultative and decision-making procedure which emphasises the protection and conservation of the environment across land, air and water. The BPEO procedures established for a given set of objectives the option that provides the most benefits or least damage to the environment as a whole, at acceptable cost, in the long term as well as in the short term."*[30]

By developing guidance on the application of this method, the assumption would be that it would help in the development of area plans, and thus deliver the best solution from the local level upwards.

It is clear that Scotland currently operates at the lower end of the hierarchy with heavy dependence on disposal. It has been shown in earlier sections of this paper that the current thrust of European policy has been towards prevention of waste arisings, although the existing directives have been directed more towards management of waste. The National Waste Strategy discusses waste minimisation to a limited extent. For example, it points out that SEPA has funding programmes aimed at encouraging waste minimisation in production processes and provision of better information.

However, the National Waste Strategy also points to some challenges for the Scottish system. For example, the plan seems to suggest that in legislative terms, the Scottish context has some weaknesses that hinder the reduction in waste arisings, and that new legislation should be considered to:

- Place a duty on major waste producers to undertake and implement waste minimisation strategies
- Require major waste producers to report waste arisings to SEPA.
- Give SEPA powers to direct waste producers to dispose of waste by a particular route or process

The strategy also suggests other legislative developments that would enable a stronger approach to be taken to waste management:

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[30] From the National Waste Strategy, SEPA, pg 19

- A statutory duty on local authorities to produce integrated waste management plans (this is currently under consultation and is likely to be implemented in the forthcoming Local Government Bill).
- A requirement on local authorities to identify waste collection and disposal charges separately on council tax bills.
- Giving SEPA powers to ban landfilling of specific types of waste
- Giving SEPA power to refuse an application for authorisation for any activity which is not in accordance with the national waste strategy

# WASTE MANAGEMENT IN GERMANY

## INTRODUCTION

Over the past thirty years the focus of German waste management policy has shifted from improving environmental standards at waste disposal facilities to minimising the amount of waste sent for disposal.

The modern era of waste management started in the 1970s with the closure of unregulated waste dumps and the development of a waste disposal infrastructure. Before 1972 waste management was largely the responsibility of municipal authorities. In 1972 the German Parliament passed the first comprehensive piece of waste legislation in Europe: the Safe Disposal of Waste Act[31]. However, as its name indicates, this Act was mainly concerned with the safe disposal of waste, neglecting the aspects of waste prevention and recovery. In 1986 the Waste Avoidance and Management Act broadened the scope of waste management law, placing more emphasis on waste avoidance and recovery, and established the core principle of waste management policy: the hierarchy of avoidance-recycling-disposal shown in the figure below:

*Figure 1: Waste Management Hierarchy*[32]


At the end of the 1980s there was a significant change in waste management policy towards a closed substance cycle, i.e. based on minimising waste production, and maximising recovery of waste. This policy shift is in the context of a wider change in German environmental policy away from an “end of pipe” approach to an “integrated” approach.

Under the German Constitution waste management is part of the “concurrent legislation” and responsibility is shared between the Federation and the devolved

[31] The *Abfallbeseitigunggesetz 1972*, cited in Dieckmann 1992, *The Law of Waste Management in the United Kingdom and the Federal Republic of Germany: A comparative study of structure and main instruments*

[32] From German Environment Ministry Web-site: http://www.bmu.de/english/fset800.php

legislatures of the Länder[33]. This means that the German Länder can only legislate on matters not covered by Federal laws, and the Federation can only pass laws in areas where it is necessary to have uniform laws for the whole country[34]. At the Federal level, waste policy is dealt with by a Directorate of the Federal Environment Ministry[35], and is the responsibility of the Environment Minister, currently Jürgen Trittin (Green Party).

Precise figures to quantify historic waste flow trends are not available for Germany. Waste statistics were not really organised at the national level until 1994 with the adoption of an Environment Statistics Act. Since responsibility for waste management monitoring is at the *Länder* level the availability of national data is poor, often involving delays of several years. Comparison between different years is also problematic because of changes in the definition of waste. However, it is generally claimed that waste generation has fallen off since 1990, having increased over several decades, and that waste recovery rates have substantially improved. In the late 1990s, the total volume of waste generated annually in Germany, excluding agricultural and mining waste, was estimated at 350 million tonnes. Figures from the Ministry of the Environment indicate that construction/demolition waste would account for about 50% of this total, mixed household and commercial waste 20% and special (hazardous) waste about 5%[36].

Some figures from 1996 indicate the importance of the waste management industry in Germany[37]. In 1996 the turnover of the waste management industry was around DM 80 Billion (£25 Billion) and employed 240,000 people. Total waste production was 354 million tonnes. Of this 176 million tonnes were construction and demolition waste, of which 41% was recovered. 27 million tonnes were household waste of which 11 million tonnes were incinerated. 40% of the 46 million tonnes of mixed municipal waste from households and businesses were recovered. 18 million tonnes of waste paper, glass, packaging and compostable waste were collected separately and recycled[38].

## WASTE DISPOSAL

For household waste, private households pay waste management charges to local authorities based on fee scales that reflect the actual cost of waste treatment and disposal, including the costs of disposal facilities. Commercial waste disposal charges for businesses are also based on standard market prices for disposal services.

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[33] Germany is made up of 16 states or "Länder", each of which has its own parliament or assembly responsible for legislating on devolved matters. Representatives of each Lander also meet in the *Bundesrat* to ratify certain federal laws. Further information about the Lander and the Federal Government system is provided on the website of the Bundesrat: http://www.bundesrat.de/Englisch/index.html

[34] German Constitution or "Basic Law" Article 74 names the areas of "concurrent legislation" including waste. Hamburg Parliament pers comm

[35] Bundesministerium fur Umwelt, Naturschutz und Reaktorsicherheit (BMU) http://www.bmu.de

[36] OECD - 2001, Environmental Performance Reviews: Germany p.75

[37] The Federal Environment Ministry, OECD Environmental Performance Review, *Waste Management and Closed Substance Cycle Economy in Germany*

[38] OECD opp cit

The number of landfill sites taking household waste in Germany fell between 1990 and 1995. This was mainly in the New Lander, were many small dumps were filled to capacity and were closed. Many landfill sites still in operation are unlined, and efforts are underway to upgrade these facilities or construct new ones. The success of recycling measures has also resulted in a decrease in the volume of household waste sent to landfill.

Germany has 61 incinerators currently in operation, though incineration capacity is unevenly distributed through the country. Regulations requiring pre-treatment of all waste sent to landfill are due to come into force in 2005. Incineration is currently the only approved method of pre-treatment. This has implications for incineration capacity which is currently only sufficient to take around 40% of that which would be needed by 2005. Since there is strong public opposition to incineration, alternative methods of pre-treatment of waste are being investigated.[39]

### WASTE RECOVERY AND RECYCLING

In general, waste recovery in Germany increased substantially in the 1990s for certain materials. The general trend is illustrated by data from Berlin. There the volume of household waste going to disposal fell by 43% between 1992 and 1998, and the amount of materials recovered from the waste stream increased by 70%.

National glass and paper recycling rates have increased greatly since 1985. In 1999 81% of glass and 73% of paper was recycled. Used glass is generally collected by the producing industry in co-operation with municipalities. Since 1994, printing paper and newspaper have been collected as a joint activity by the industries concerned, with operational costs paid by municipalities.

Many other products and materials have separate collection programmes: biowaste; used oil; construction waste; batteries; end of life scrap; and packaging waste. In 1996 the volume of waste recovered through these separate schemes was estimated at 10 million tonnes. [40]

## PACKAGING WASTE

At the end of the 1980s, packaging waste made up 50% of all waste by volume. Estimates suggested that at current rates of production half of the existing landfill capacity would be exhausted by 2005. This resulted in the adoption of a Packaging Ordinance (Regulation) in 1991.

This Ordinance broke new ground in extending producer responsibility for waste. The Ordinance required packaging producers to take back and recycle a certain percentage of their products. The 1991 Ordinance was superseded by a new Ordinance in 1998[41]. This made the requirements for avoidance and recovery of

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[39] OECD opp cit

[40] Ibid

[41] Ordinance on the Avoidance and Recovery of Packaging Waste (Verpackungsverordnung) 1998 (as amended): http://www.bmu.de/english/download/waste/files/verpackungsverordnung.pdf

packaging waste more practicable in the light of experience gained, promoted competition in the waste management industry and implemented the requirements of the EU Directive on Packaging and Packaging Waste[42]. The 1998 amendment to the Ordinance set a target of 45% of all packaging waste to be recycled by June 2001. Higher targets are set for recycling specified types of packaging waste, such as paper and glass. Enforcement of the Packaging Ordinance is the responsibility of the Länder.

The main aims of the Packaging Ordinance are to ensure that packaging is made of environmentally compatible and easily recoverable material, and to avoid the creation of packaging waste. Specific waste reduction measures include:

- Reducing weight and volume of packaging materials to the minimum necessary to protect and market goods
- Making packaging refillable
- Ensuring recovery of materials from packaging that cannot be refilled

## DUALES SYSTEM DEUTSCHLAND (DSD)

Companies found it difficult to meet the recycling targets of the Packaging Ordinance. As a result the government set up the Duales System Deutschland (DSD). It is a non-profit organisation to which companies pay a subscription. Members of the DSD can then put the green dot (gruener punkt) trademark on their packaging. This guarantees that the packaging will be recycled if it is collected by one of the recycling companies who also participate in the scheme.

There is no obligation on companies to take part in the scheme, but because of the way it is set up – with affiliation to local waste collection agencies, it provides companies with the best means of meeting their recycling quotas. Several court cases have been brought against the DSD for monopolistic tactics, although these have not been successful. One municipality recently attempted to make a detour around the DSD by making their waste into combustible balls instead. It was court-ordered to stop obstructing the operation of the DSD in its district in October 1999—the Packaging Ordinance requires any competition to operate on the area of the total Bundesland (state) or more in order to be compliant with the Law. Thus the DSD can have little competition[43].

Companies pay a license fee based on the amount and weight of packaging they produce. In 1993 DSD was given powers to enforce payment of the Green Dot fees which were often paid late or not in full.

DSD co-ordinates collection with local waste management companies. Households receive a special “green dot” container, and shops also provide green

[42] European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, Official Journal L 365 , 31/12/1994 P. 0010 - 0023

[43] Bailey, L – 1999 *Germany Implements Packaging take-back Regulations* http://www-personal.umich.edu/~lbailey/greendot.html

dot collection facilities. DSD certifies sites for recycling to ensure that products are not dumped. Some international competitors in the recycling industry have complained that the DSD has an unfair advantage in that it has a 'free' source of recyclable materials. This may become an issue as the European Union moves towards centralising recycling regulation.

### Does the scheme work?

According to a 1992 survey of over 8000 companies, 80% introduced measures to optimize packaging between 1990 and 1992. Consumers, are happier with the Green Dot program than ever before, according to recent studies. In 1996, 54% stated that the Green Dot was "a good thing". The same study showed that 89% of all consumers claim to sort their rubbish correctly for recycling[44].

The table below shows recycling "quotas" from the Packaging Ordinance, and the % recycling achieved under the DSD.

**Table 2 – Recycling targets and performance under the DSD**[45]

| **Materials** | Glass | Paper, Card | Plastics | Tin | Composites | Aluminium |
|---|---|---|---|---|---|---|
| **Recycling Quota** | 75 | 70 | 60 | 70 | 60 | 60 |
| % achieved under DSD | 89 | 169 | 108 | 105 | 66 | 87 |

Note: Recycling rates greater than 100% result because consumers also recycle packaging not covered by the Packaging Ordinance and DSD system in packaging bins

## THE CLOSED SUBSTANCE CYCLE WASTE MANAGEMENT ACT (CSCWMA)

The key piece of German Waste management law is the Closed Substance Cycle and Waste Management Act 1994[46]. It has two fundamental goals:

- To introduce a system of closed substance cycle management to help protect natural resources by increasing efficiency (waste avoidance) and recycling, thus leading to a reduction in waste volumes, and
- To overcome bottlenecks in waste disposal and to ensure safe and environmentally sound waste disposal.

Waste producers have to comply with three basic obligations:

1. To avoid waste
2. To recover waste
3. To dispose of waste

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[44] Bailey L - opp cit

[45] Source OECD (2001) Environmental Performance Reviews, Germany

[46] Act for Promoting Close Substance Cycle Waste Management and Ensuring Environmentally Compatible Waste Disposal (Kreislaufwirtschafts und Abfallgesetz KrW/AbfG)

The Act differentiates between “wastes for recovery” and “wastes for disposal”. The cornerstone of the Act is the obligation placed on producers to take responsibility for the products they make. This extends the “producer responsibility” requirements from only packaging waste (as per the Packaging Ordinances), to cover all production and consumer goods [47]. The obligation requires that products should as far as possible be designed to minimise waste in their manufacture and use, and that at the end of their life cycle that a high level of environmentally sound recovery or disposal can be achieved. It establishes the product responsibility of the manufacturer and recognises waste avoidance as the top priority. If the waste cannot be avoided, the priority then is substance recycling, or energy recovery, e.g. by using waste as a fuel. Once these options have been exhausted, then remaining waste must be disposed of in an environmentally friendly way. The wastes have to be prepared prior to disposal in Order to make them inert as a sort of slag. Private waste collection companies have to inform Local Authorities of the type, volume and composition of waste and of the planned disposal site. The Local Authority then allocates the waste to a pre-treatment site. Under a recent Ordinance on the Storage of Municipal Wastes and Biological Treatment Processes, untreated waste will not be permitted in landfills after 2005.

The Länder and the local waste management authorities are responsible for implementing and enforcing the CSCWMA.



[47] these are specified in the Annex to the Act, implementing the schedule of Council Directive 91/156/EEC of 18 March 1991 amending Directive 75/442/EEC on waste, OJ L 078 , 26/03/1991 P. 0032 - 0037