The Environmental Levy on Plastic Bags (Scotland) Bill was introduced to the Scottish Parliament on 17 June 2005 by Mike Pringle MSP. The Bill seeks to introduce a levy on the provision of plastic bags to customers. The Bill proposes that revenue raised from the levy should be used by local authorities to spend on environmental projects.

This briefing considers the proposals and some of the key issues arising. This briefing should be read alongside the SPICe Briefing on Plastic Bags Policy in Ireland and Australia.
## CONTENTS

**KEY POINTS** ...........................................................................................................................................................................3

**INTRODUCTION** ...........................................................................................................................................................................4

 **OTHER COUNTRIES PLASTIC BAG POLICIES** ..........................................................................................................................5

**PLASTIC AND PAPER CARRIER BAGS** ...........................................................................................................................................5

 **ENVIRONMENTAL IMPACTS OF PLASTIC BAGS** ..........................................................................................................................5

 **TYPES OF CARRIER BAG** .........................................................................................................................................................6

 **PLASTIC** ..................................................................................................................................................................................7

 **PAPER** ......................................................................................................................................................................................9

 **THE CARRIER BAG INDUSTRY IN SCOTLAND** ..........................................................................................................................10

 **COMPANIES PLASTIC BAG POLICIES** .......................................................................................................................................10

**CURRENT LEGISLATIVE AND POLICY FRAMEWORK** ....................................................................................................................12

 **EUROPE** ................................................................................................................................................................................12

 **SCOTLAND** ..............................................................................................................................................................................13

**KEY FINDINGS OF THE SCOTTISH EXECUTIVE COMMISSIONED REPORT** ..................................................................................15

**POTENTIAL IMPACT OF THE LEVY** ..............................................................................................................................................18

 **ECONOMIC IMPACT OF THE BILL** ..............................................................................................................................................18

 **IMPACT ON CONSUMERS** .........................................................................................................................................................19

 **IMPACT OF COLLECTING THE LEVY ON LOCAL AUTHORITIES** ..............................................................................................19

 **REVENUE GENERATED BY THE LEVY** ........................................................................................................................................20

 **ENVIRONMENTAL PROJECTS THE LEVY CAN BE SPENT ON** .....................................................................................................21

**SOURCES** ..................................................................................................................................................................................23
KEY POINTS

- The Environmental Levy on Plastic Bags (Scotland) Bill proposes to introduce a levy of 10p per plastic bag provided to customers.

- A business which supplies plastic bags to customers would pay any revenue raised to the local authority. Business which failed to charge the levy would be subject to a fine and penalty of £100 for each occasion when a customer failed to be charged.

- Revenue generated from the levy after deductions of reasonable collection costs would be ring-fenced to be spent on environmental projects.

- Both paper and plastic bags are sourced from primary natural resources, trees and oil respectively, and so both have an environmental impact before they are manufactured, used or disposed of. There have been attempts to appraise the impact of one against the other, but both have a negative impact on the environment, albeit in different ways.

- Around 2,500 people are employed in the manufacture, import and distribution of carrier bags and around 12,000 in the wider plastic films sector in the UK. It is estimated that there are between 15 and 20 plastic bag manufacturers, importers and distributors in Scotland. The plastic industry estimates that anywhere between 300 and 700 direct jobs could be lost as a result of the levy.

- The Bill states that one of its key objectives is to protect the environment by the reduction in the number of plastic bags. Supporters of the levy highlight the direct harm caused by plastic bags to birds which might eat or use them for nest building and whales and dolphins who might eat plastic bags mistaking them for jellyfish.

- The Bill aims to assist local authorities in achieving the targets set in the National Waste Plan. Whilst the recycling and composting rate for Scottish local authorities has risen significantly between 2002 and 2004, data suggests that local authorities need to double the quantity of waste they recycle and compost in order to meet National Waste Plan targets.

- The Scottish Executive commissioned AEA Technology to produce an extended impact assessment report on the proposed plastic bag levy. The report does not make any judgement on whether a levy should be introduced. The report assumes that the introduction of a levy would lead to a 25% increase in the number of paper bags consumed.

- The AEA Technology study suggests that the overall environmental impact of introducing a levy on plastic bags would remain very similar to the current situation as the benefits of reducing plastic carrier bag usage would be displaced by the increased use of paper bags. The report suggests that if the levy was applied to paper as well as plastic carrier bags, it would lead to greater environmental benefits.

- The Bill estimates that total revenue of £10million would be raised if a levy was introduced. Concern has been raised by some local authorities regarding the costs of implementing and administrating the levy.
INTRODUCTION

The Environmental Levy on Plastic Bags (Scotland) Bill (the Bill) was introduced in the Scottish Parliament on 17 June 2005 by Mike Pringle MSP. It is accompanied by a ‘Policy Memorandum’ (PM) (2005) and Explanatory Notes (2005) which include a Financial Memorandum. The first consideration of the Bill at Stage 1 is due to take place at the Environment and Rural Development Committee meeting on 28 September 2005.

The Bill seeks to introduce a levy of 10p per plastic bag provided to customers. The Policy Memorandum (2005, p5) states that the Bill would provide positive environmental benefits in terms of reducing the number of plastic bags in the waste stream as litter or in landfill sites. It also states that the levy on plastic bags would raise the general awareness of the environmental issues of reducing, recycling and reusing waste. The Policy Memorandum (2005, p16) also states that a reduction in the overall consumption in plastic bags would ensure that less refined oil was used.

The Bill details that the 10p charge on plastic bags, would be made to the customer at the point of sale. A business which supplies plastic bags to customers would be required to keep records of the number of plastic bags sold. The business would pay any revenue raised to the local authority. Local authorities would be responsible for the implementation and enforcement of the levy. Businesses which failed to charge the levy would be subject to a fine and a penalty of £100 for each occasion when a customer failed to be charged. Revenue generated from the levy after deductions of reasonable collection costs would be ring-fenced to be spent on environmental projects.

The Policy Memorandum (2005, p1) states that the Bill has three key objectives:

- protecting the environment both by the reduction in the number of plastic bags consumed and by investing the money raised by the levy in local environmental projects
- assisting local authorities towards meeting the Scottish National Waste Plan targets by encouraging the reduction of plastic bags in circulation and the re-use of those that are; and
- raising awareness of environmental issues such as recycling and litter

The Presiding Officer’s Statement on Legislative Competence (Explanatory Notes 2005, p14) states that the Bill is within the legislative competence of the Scottish Parliament. Under the Scotland Act Section A1, Part II, Schedule 5, fiscal, economic and monetary policy are reserved issues. However there is an exception for local taxes used to fund local authority expenditure (for example, council tax and non-domestic rates). The Presiding Officer’s statement identifies the Bill as falling within these devolved competences as the environmental levy would be a local tax used to fund local authority expenditure. This is the first time that a bill to establish such a tax has been introduced into the Scottish Parliament.

Mike Pringle MSP consulted on his proposal for a Bill during 2004. The consultation on the proposed environmental levy on plastic bags (the consultation) resulted in 117 responses. Respondents included businesses in the packaging trade, environmental organisations, retailers and local authorities.

This briefing seeks to put the proposed introduction of an environmental levy on plastic bags in context. The briefing includes information on the current legislative framework and considers the potential impacts of a levy.
OTHER COUNTRIES PLASTIC BAG POLICIES

Several countries have introduced measures which aim to impact upon the consumption of plastic bags. These include:

- **Bangladesh** operates a total ban on all polythene bags in the capital city Dhaka. Plastic bags were identified as a contributing factor in the city’s floods in 1988 and 1999 with plastic bags not properly disposed of ending up washed into rivers and sewers where they blocked drains.
- **since 1994 Denmark** has applied a levy on bags to the retailer when they buy bags, rather than on the final consumer.
- **Ireland** introduced a €0.15 tax on plastic bags in March 2002. In the first year of operation the scheme raised some €10 – 12 million (£7-8 million). There has been an overall reduction in plastic bags consumption of nearly 95%. Money raised through the levy is ring-fenced to be spent on an Environment Fund.
- **Australia** operates a national code of practice for the management of plastic retail carry bags with targets for the reduction of bag use as well as recycling. The code of practice covers only high density polythene bags and runs from 10 October 2003 to 31 December 2005. Overall, the findings indicate that implementation of the code has been strong in the supermarket sector, with significant reductions in lightweight bag use as a result. However, compliance with the code has been markedly poor among non-supermarket retailers.
- **UK HM Treasury** carried out a plastic bag tax assessment in 2002. The UK Government currently does not have any plans to introduce a levy on plastic bags. The UK Government supports the ‘bag for life’ and ‘penny back’ schemes that have been introduced by some of the larger supermarket chains.

International comparisons are explored further in the separate SPICe Briefing ‘Plastic bags policy in Ireland and Australia’.

PLASTIC AND PAPER CARRIER BAGS

ENVIRONMENTAL IMPACTS OF PLASTIC BAGS

The PM (2005, p1) states that one of the key objectives of the Bill is to protect the environment by the reduction in the number of plastic bags. Due to plastic carrier bags’ light weight and low volume they are often a highly visible form of litter, caught in trees and bushes. Several responses to Mike Pringle MSP’s consultation highlighted direct harm caused by plastic bags to animals. RSPB Scotland (2004) highlights that plastic waste can be dangerous with species often unable to differentiate plastic bags from organic materials that they might eat or use in nest building. The Scottish SPCA (2004) highlight that larger animals such as horses and cattle can consume plastic materials which then become lodged in the stomach and can lead to sudden death. RSPB Scotland (2004) states that plastic bags may be a problem for whales and dolphins in Scottish waters as turtles and cetaceans can eat plastic bags, mistaking them for jellyfish.

Aberdeen City Council (2004) highlight in their response to the consultation that litter “is not a problem specific to plastic bags, it is a problem of social behaviour.” They also question why, if the primary aim of the Bill is to reduce levels of litter and if in broad terms it is an ‘environmental levy’, other forms of litter including plastic bottles and fast food containers are not included.
TYPES OF CARRIER BAG

Carrier bags tend to be made from paper or plastic. Most assessments of the environmental impact of the primary resource appraise one type of bag against another. For this reason, some background to both types of bag is given below. However, as the Bill focuses on plastic bags, so information on paper bags is less detailed. In addition, few assessments make the distinction between using another type of bag, and bags not being used at all. Reflecting on the Irish example, Nolan-ITU (2002) states:

“This [Irish] levy has resulted in a dramatic decrease of 90-95% in ‘single-use’ plastic bag consumption over the past year and a substantial increase in reusable bags. Although the levy does not apply to paper bags, these have not replaced plastic shopping bags in the supermarket sector.”

One mechanism used to look at the economic, social and environmental impact of plastic and paper bags is to analyse the product from cradle to grave. For a bag this means assessing the product from when raw materials are acquired, through production and use, to final disposal (and beyond) at the end of its useful life. As the AEA Technology (AEAT) report highlights (2005b, p17) no ‘life cycle’ studies on plastic or paper bags have been carried out based on data from Scotland or the UK. The AEAT report uses the French Carrefour study and applies it to Scotland.

Both paper and plastic bags are sourced from primary natural resources, trees and oil respectively, and so both have an environmental impact before they are manufactured, used or disposed of. There have been attempts to appraise the impact of one against the other, but both have a negative impact on the environment, albeit in different ways.

The South African Department of Environmental Affairs and Tourism, carried out a lifecycle analysis. Two diagrams from the report are detailed in Figures 1 and 2. It is important to note however that these figures make assumptions at some points, for instance that plastic and paper bags will either be recovered at a landfill site or recovered from the environment. This is not always the case and thus bags can continue to have impacts on the wider environment.

Figure 1 - Life cycle of a plastic carrier bag
Types of plastic bag

There are 2 main types of plastic bags in use in Scotland. Disposable high-density polyethene (HDPE) bags, which offer the consumer lightweight, waterproof, high strength means of carrying shopping. They come both branded and unbranded. These types of bags are favoured by supermarkets and other food retail outlets. Low-density polyethene (LDPE) bags are stronger and less lightweight and tend to be used by retailers selling higher value goods, particularly department and clothing stores. They are normally branded. Both types of bags are made from a by-product of oil refining.

Over recent years there has been an increase in availability of reusable low-density polythene (LDPE) bags, often referred to as ‘bags for life’. Customers purchase a bag for a small fee and are encouraged to re-use the bag and return the bag to the shop for recycling when it is worn out, with the customer receiving a free replacement.

There are also non-woven poly-propylene bags, which are strong and durable, intended to be used many times, and suitable for everyday shopping. Woven polypropylene uses a strengthening technique to form ‘fibres’, resulting in a stronger bag. Woven polypropylene bags are used, for example, for pet food.

Eight billion plastic bags were used in the UK in 2000 (Defra 2003b). There are no specific figures available for the level of consumption of plastic bags in Scotland. Estimates for the level of plastic bag used in Scotland per annum range from 775 million bags (AEAT 2005b p19) to 1 billion plastic carrier bags (Pringle 2004).
**Primary resource**

Plastic bags are manufactured from ethylene, a by-product of oil and gas refining, and therefore a non-renewable and finite resource. As with any other oil based product, costs are subject to fluctuation, depending on what is happening on world markets, and, long term, the primary resource, oil, will begin to run out.

According to the 2002 Nolan-ITU report:

> The embodied energy in one average HDPE singlet bag, weighing 6 grams, including the production of the polymer, bag manufacturing and transport can be compared to energy impacts of the following:

- Fuel consumed by driving a car 1 km is 4.18 MJ, equivalent to 8.7 bags; and
- Fuel consumed by driving a 28 tonne articulated truck 1 km is 31 MJ, equivalent to 64.6 bags (i.e. travelling from Melbourne to Sydney would be roughly equivalent to 57,300 bags).

It has been argued (Despres 2005) that the process of producing plastic bags is extremely efficient, with the yield from the initial raw material being some 90% as against a yield of 75% for paper bags. This means that there is less waste from the plastic bag process, although different types of raw materials used for bags will have different impacts.

British Polythene Industries (2004) in their response to Mike Pringle MSP’s consultation highlight that the environmental impact of an individual plastic bag has reduced over the last thirty years as the average weight of a carrier bag has fallen by 65%. The Carrier Bag Consortium (2004) highlights that plastic can be a recycled product, with the plastic industry recycling 300,000 tonnes of plastic per annum.

It argues that “A carrier bag tax will make absolutely no difference to global oil consumption”. However the Consortium also estimates that the environmental benefit of using plastic bags as opposed to alternatives is “in calculable”.

**Plastic bags reuse**

The AEAT Report (2005b, p13) highlights several surveys which sought to measure the current level of plastic bag reuse. These include:

- Waste Watch study for the UK – 54% of people questioned said that they reuse plastic carrier bags
- Scottish Waste Awareness Group (SWAG) Public Attitudes to Reduce, Reuse, Recycle in Scotland (2001) – 84% of respondents stated that they re-used plastic bags although the majority of theses were ultimately used as bin liners

As the AEAT report highlights, whilst respondents to the SWAG survey state that they reuse bags this does not mean that 84% of bags are re-used, it means that 84% of people re-use some of their carrier bags at some point. Pringle (2004) highlights in his consultation document that the majority of re-used bags are re-used once, often as bin liners.
Types of paper bag

Paper bags tend to be used in the retail sector for small items purchased from newsagents and greengrocers. They are also used for products purchased from large boutiques where they tend to have plastic coating or plastic handles.

Primary resource

It has been estimated (Despres, 2005) that one 15-20 year old tree can produce 700 paper bags, although most paper bags are made from a mix of virgin and recycled material. Virgin material is used to provide strength and elasticity.

The AEAT report (2005b) estimates that paper bag usage stands at around 5% of plastic bag usage, a figure of between 38.75 million and 50 million¹.

The report highlights that whilst some paper bags would be recycled by consumers (e.g. through kerbside collections) the introduction of a levy on plastic bags would ultimately lead to more paper bags going to landfill where they would degrade giving off greenhouse gases (AEAT 2005, p13). The AEAT report also highlights that paper bags are anywhere between six to ten times heavier than lightweight plastic carrier bags and as such, require more transport which brings with it associated costs. Paper bags also take up more room in a landfill if they are not recycled (AEAT 2005b p31).

Friends of the Earth Scotland point to the merits of paper bags:

“Furthermore, the study [AEAT report] fails to take account of the fact that unlike plastic, paper is one of the easiest wastes to recycle and less likely to end up dumped in landfills. (Friends of the Earth Scotland, Response to AEAT Report, 2005)

The key features of the different types of bags are detailed in Table 1.

Table 1 Key features of carrier bags

<table>
<thead>
<tr>
<th>Bag type</th>
<th>Features</th>
<th>Average cost to the retailer per thousand bags*</th>
<th>Average weight per thousand bags (kg)*</th>
<th>Relative bag storage volume**</th>
<th>Recyclability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightweight plastic carrier</td>
<td>Light, strong, durable, effective when wet</td>
<td>£7.47</td>
<td>8.4</td>
<td>1</td>
<td>Yes – but not all stores have facilities</td>
</tr>
<tr>
<td>‘Bag for life’</td>
<td>Light, strong, durable, effective when wet</td>
<td>£60.88</td>
<td>47.4</td>
<td>4</td>
<td>Yes- system of replacement actively encouraged</td>
</tr>
<tr>
<td>Fully degradable plastic bag</td>
<td>Light, strong, durable, effective when wet</td>
<td>£6 to £8</td>
<td>6.5</td>
<td>1</td>
<td>Degradable under the right conditions. Problematic if contaminate conventional plastic recycling.</td>
</tr>
</tbody>
</table>

¹ Calculated using the estimated range of plastic carrier bags used annually in Scotland i.e. 775 million to 1 billion

providing research and information services to the Scottish Parliament
<table>
<thead>
<tr>
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<th>Average cost to the retailer per thousand bags*</th>
<th>Average weight per thousand bags (kg)*</th>
<th>Relative bag storage volume**</th>
<th>Recyclability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper, without handles^</td>
<td>Convenient</td>
<td>£50</td>
<td>51</td>
<td>8</td>
<td>Yes- kerbside collections available</td>
</tr>
<tr>
<td>Paper, with handles^</td>
<td>More appealing to customers e.g. for shoes and clothes</td>
<td>£220</td>
<td>124</td>
<td>10</td>
<td>Yes- kerbside collections available but can be more problematic due to mixed materials</td>
</tr>
<tr>
<td>Non-woven polypropylene</td>
<td>Durable, strong, effective when wet</td>
<td>£333.33</td>
<td>138.7</td>
<td>20</td>
<td>Not at present</td>
</tr>
<tr>
<td>Woven polypropylene</td>
<td>Durable, strong, effective when wet</td>
<td>£433.33</td>
<td>226</td>
<td>20</td>
<td>Not at present</td>
</tr>
</tbody>
</table>

*Data provided by CBC and Symphony Plastic Technologies plc. Based on average price of an average bag.

**The relative volume of bags (to a conventional lightweight bag) is important for transportation and storage units required compared with plastic carrier bags.

^The average weight of all paper bags available is 99g (arithmetic mean of 51, 81 and 166g).

Source: AEAT 20005b, p6

THE CARRIER BAG INDUSTRY IN SCOTLAND

Around 2,500 people are employed in the manufacture, import and distribution of carrier bags and around 12,000 in the wider plastic films sector in the UK (AEAT 2005b, p36). It is estimated that there are between 15 and 20 plastic bag manufactures, importers and distributors in Scotland (Carrier Bag Consortium 2004). This includes the British Polythene Industries PLC (BPI) which has Scottish plants at Greenock, Ardeer, Dumfries and Cowdenbeath (BPI 2004), with around 400 people being employed at their Greenock plant. Packaging suppliers Simpac employ around 100 people at their plant based in Glasgow. McKinnon and Hay are a supplier of LDPE bags based in Midlothian. Another important company in the bag industry is Smith Anderson based in Fife which manufacturer’s large volumes of paper bags from both virgin and recycled sources.

COMPANIES PLASTIC BAG POLICIES

On 19 September 2005 WRAP launched the Choose to Reuse Campaign which is a six week awareness campaign piloting in Edinburgh. The campaign is aimed at encouraging people to reuse bags, swapping disposable carrier bags for reusable environmentally-friendly alternatives. The campaign is supported by the Scottish Waste Awareness Group (SWAG) the BRC, SRC, Scottish Executive and retailers including Asda, Tesco, Somerfield, Scotmid, Boots and Dobbies Garden Centre. Early results from the campaign are expected in mid December. A similar campaign is also being carried out in Bristol. Table 2 provides information on several retail companies’ current policies towards the issuing of bags to customers.2

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2 Sources: Companies’ customer care departments, Pringle 2002 and AEAT (2005a,b,c)
Table 2: Retail companies carrier bag policies

<table>
<thead>
<tr>
<th>Company</th>
<th>Carrier Bag Policy</th>
</tr>
</thead>
</table>
| ASDA    | • the Wales Environment Trust in association with ASDA stores is in the process of carrying out a research project into the effectiveness of the ‘bags for life’ approach  
• for the first six weeks of the project all single use bags will be removed from stores and replaced with stronger ‘bags for life’ at no charge coupled with an intensive in-store ‘re-use’ campaign  
• in the following 4-5 weeks the single bags will be reintroduced, and a small charge levied on the ‘bags for life’. |
| Boots   | • issue 500 million carry out bags per year  
• stores in Ireland charge for plastic bags under the Irish plastic bag levy  
• no charge for plastic bags in UK  
• trialing a ‘carrier bag for life’ scheme in some stores  
• use notices at till points asking customers whether they need a bag  
• reduced bag thickness  
• reduced the range of sizes of bag available |
| B &Q    | • October 2004 B&Q in Scotland undertook a trial of charging customers 5p per plastic bag.  
• money raised from the charge (less VAT) goes to Keep Scotland Beautiful who use it for anti-litter promotional campaigns in Scotland.  
• demand for plastic bags in B&Q Scotland stores has fallen by 85%.  
• trial was due to be reviewed in Spring 2005. |
| Co-op   | • use a mix of HDPE and LDPE in Coop standard degradable carrier bags.  
• they do not use bags other than for mushrooms and certain pre-packed products.  
• offer a bag for life option for 10p  
• market research carried out for Shopping with Attitude campaign showed that 6 in 10 customers said that retailers should use only degradable or bio-degradable materials – prompting Co-ops move to degradable carriers. |
| Dixons  | • 2002 –Dixons changed the design of their carrier bags in order to reduce the amount of material used per bag, saving 262 tonnes of plastic annually.  
• piloted using 100% recycled carrier bags – made from post-consumer plastic waste. |
| Ikea    | • Edinburgh’s IKEA store started charging 5p for its lightweight plastic carrier bags at Easter 2004.  
• money raised from the charge is ring-fenced for local charities to apply for, ideally with an environmental scheme in mind.  
• £6,000- £7,500 has been raised for charitable projects.  
• bag use has fallen by 3 million bags per year equating to a 95% reduction in plastic bags.  
• Sales of ‘bags for life’ high-density polyethene bags have increased |
| John Lewis | • use range of bags mainly high-density polyethylene and some paper  
• in September 2005 due to introduce at a charge to customer a 100% reusable biodegradable bag manufactured from jute  
• employees are advised to issue bags sensibly when required |
<table>
<thead>
<tr>
<th>Company</th>
<th>Carrier Bag Policy</th>
</tr>
</thead>
</table>
| Lidl       | • Lidl’s UK stores charge 5p for lightweight carrier bags  
             • charge is aimed at reducing the cost of the items sold in Lidl stores |
| Next       | • in Ireland paper bags issued  
             • in Ireland stores with the ‘home’ brand have found a need to double bag larger bulkier items, especially in wet conditions  
             • UK low density polyethene bags issued  
             • in UK bags are automatically issued to the customer to protect their purchase. If the customer exchanges a purchase the same bag is re-used |
| Virgin Megastores | • in Scotland low density polyethene bags issued  
                        • in Ireland paper bags issued  
                        • all employees are trained to ask customers if they require a bag as part of the customer service programme |
| Woolworths | • currently charge 1p per carrier bag  
             • money raised goes towards Woolworths charity Kids First |

**CURRENT LEGISLATIVE AND POLICY FRAMEWORK**

**EUROPE**

Environmental priorities for the European Commission are moulded by *Environment 2010 - Our Future, Our Choice* (European Commission 2001) which sets a 10 year agenda. The programme includes a mandate to develop seven thematic strategies which include waste prevention and recycling, and sustainable use and management of natural resources. The final strategies are due to be published before the end of 2005. Several European Directives take forward policies relating to the use of natural resources and waste prevention and recycling.

**EU Landfill Directive**

The EU Landfill Directive (1999/31/EC) requires a reduction in the amount of biodegradable municipal waste (BMW) sent to landfill. For the UK, the Directive sets a target the volume of BMW going to landfill should be reduced to 75% by 2010, 50% by 2013 and 35% by 2020. The Landfill directive establishes rules for the use of landfill for inert, non-inert and hazardous wastes, and bans the landfilling of certain specific types of waste (e.g. tyres, corrosive and liquid wastes). It also includes rules on the pre-treatment of waste, to prevent or reduce its impacts, volume, or to recover value.

**EU Packaging and Packaging Waste Directives**

The Packaging and Packaging Waste Directive 94/62/EC amended by 2004/12/EC aims to bring into line national measures regarding the management of packaging and packaging waste in order to prevent or reduce its impact on the environment and ensure the functioning of the internal market. It contains provisions on the prevention of packaging waste, on the re-use of packaging and on the recovery and recycling of packaging waste. From 2001, Directive targets require that at least 50% of the UK’s packaging waste must be re-utilised through recycling and other recovery methods. The UK has implemented the Directive through the Packaging Regulations 1998.
The treatment and disposal of waste is regulated by the Scottish Environment Protection Agency (SEPA) in order to ensure the protection of the environment and human health. Other organisations that play a role in Scotland’s waste management include:

- local authorities who play a key role in relation to the delivery of waste policies as they have responsibility for the treatment and disposal of domestic waste and commercial and industrial waste which they collect.
- Keep Scotland Beautiful, is an environmental charity aiming to achieve litter-free and sustainable environments.
- Waste Aware Scotland is a national campaign programme aimed at changing public attitudes and behaviour towards waste through encouraging waste reduction, re-use and recycling.
- Waste and Resources Action Programme (WRAP) WRAP is a UK initiative funded by the Scottish Executive, DEFRA and the administrations in Wales and Northern Ireland. WRAP promotes recycling and resource efficiency across the UK. Its main aims are to find markets for recycled materials and to undertake waste minimisation work.

National Waste Plan

The Policy Memorandum (PM) (2005, p1) states that one of the three key objectives of the Bill is:

“assisting local authorities towards meeting the Scottish National Waste Plan targets by encouraging the reduction of plastic bags in circulation and the reuse of those that are”

Whilst the PM (p5) states that the Environmental Levy would assist local authorities in achieving the targets set in the National Waste Plan it does not provide any specific estimates for the impact a levy could have on the amount of waste sent to landfill and the levels of recycling.

Plastic bags constitute 0.3% of the municipal waste stream in the UK (HM Treasury 2002). The AEAT report highlights that any reduction in the amount of plastic bags disposed of would have very little effect on the overall waste disposal figures (though no figures are produced on the amount of plastic bags in the environment i.e. not landfilled) Using the Treasury figures, it is estimated that if 0.3% of the 2,589,702 tonnes collected by local authorities across Scotland for disposal in 2002/2003 was plastic bags this would amount to 7,769 tonnes of plastic bags (AEAT 2005b p12).

Scotland’s National Waste Strategy (NWS), was launched in 1999. The NWS provides a framework for a reduction in the amount of waste Scotland produces, and aims to deal with the waste which has been produced in more sustainable ways.

The NWS established eleven Waste Strategy Area Groups. Each group was charged with producing an Area Waste Plan (AWP) presenting the strategic plan for waste arising in that area based on NWS principles.

The National Waste Plan 2003 (NWP) provides an integrated summary of these AWPs, and an action plan to implement the considerable changes required. It also sets targets designed to comply with the Landfill Directive, which requires that by 2010, only 75% of BMW should go to landfill, 50% by 2013 and 35% by 2020. The NWP aims to achieve 58% by 2010, 40% by 2013 and 30% by 2020. This betters EU targets by 17%, 10% and 5% respectfully.

In pursuit of these targets the NWP undertakes to recycle or compost 25% of the waste collected by local authorities by 2006, and 55% by 2020. As a result of the last Spending
Review, a further recycling/composting target of 30% by 2008 has been added. Other targets included in the NWP are:

- stopping growth in municipal waste produced by 2010
- recovering energy from 14% of municipal waste by 2020

The target of stopping growth in municipal waste produced by 2010 is a key component of the NWP. Current growth rates are estimated at around 2% (SEPA 2003).

The Strategic Waste Fund (SWF) is a specific grant scheme for local authorities established by the Executive for the implementation of the NWS. For the period 2005-06 £111.5m has been allocated, rising to £120.1m and £132.6m in 2006-07 and 2007-08 respectively (Scottish Executive 2005a, p142).

Progress of the National Waste Plan

Progress towards NWP targets is published in Annual Progress Reports for each area; an overall progress report is published annually in the Waste Data Digest. The most recent report states that:

“The recycling and composting rate for Scottish local authorities was 12.1% in 2003/2004. This rate has risen significantly in the last two years (2002/2003 and 2003/2004) and preliminary data for the first three quarters of 2004/2005 indicate that this trend will continue. Despite this, 2003/2004 data suggest that local authorities need to double the quantity of waste they recycle and compost to meet the Scottish Executive’s target.”

The recycling and composting rate for Scotland has continued to rise with the rate rising to 17.3% for 2004-2005 (Scottish Executive 2005b).

Further information on the National Waste Plan is available in SPiCe Briefing 03/65 National Waste Plan 2003. The Environment and Rural Development Committee carried out an Inquiry into the National Waste Plan in 2003. The Inquiry acknowledged the huge challenge faced in tackling Scotland’s reliance on landfill and accepted the Executive’s National Waste Plan as a substantial contribution. The Committee recommended an improvement and development of the work currently underway through recommendations including a call for urgent progress to be made in setting challenging targets for the reduction of landfill of key non-municipal waste streams. The Scottish Executive is currently consulting on the sustainable management of waste from business and public sector organisations in Scotland. The Committee recommended a development of robust and challenging waste reduction and re-use targets to be incorporated into the National Waste Plan as a matter of urgency. The Executive intend to issue shortly a consultation on household waste prevention. The Inquiry also urged the Executive to produce an action plan to stimulate change in the packaging industry and to consider tougher targets for reducing and recycling packaging.
KEY FINDINGS OF THE SCOTTISH EXECUTIVE COMMISSIONED REPORT

The Scottish Executive commissioned AEA Technology (AEAT) to produce an extended impact assessment report on the proposed plastic bag levy. The report has been produced in three volumes:

- Proposed Plastic Bag Levy- Extended impact assessment: Research Report
- Proposed Plastic Bag Levy- Extended impact assessment: Volume 2: Appendices
- Proposed Plastic Bag Levy –Extended impact assessment: Research Summary

The report does not make any judgement on whether a levy should be introduced. Table 3 provides a brief overview of the AEAT report findings of a levy on plastic bags in the key areas considered in the report.

### Table 3 Summary of AEAT report findings on the anticipated impact of a plastic bag levy

<table>
<thead>
<tr>
<th>Area</th>
<th>Impact of a plastic bag levy</th>
</tr>
</thead>
</table>
| Environment  | The changes in environmental indicators due to a levy are modest (i.e. 1% or less) in comparison to overall environmental impacts from other activities in Scotland. There would be some environmental benefits of introducing a levy on plastic bags these would include:  
  - reducing the consumption of non-renewable primary energy  
  - less acid rain (atmospheric acidification)  
  - improve air quality (ground level ozone formation)  
  - reduce level of solid waste production  
  - reduce the risk of litter  
  There would be environmental disbenefit in relation to:  
  - increase in the consumption of water  
  - increase climate change (emission of greenhouse gases)  
  - high increase in eutrophication of water bodies (Waters rich in mineral and organic nutrients that promote a proliferation of plant life, especially algae, which reduces the dissolved oxygen content and can cause the extinction of other organisms) |
| Consumers    | Consumers would act to reduce the financial impact of the levy by switching away from charged plastic bags. This would limit the detrimental financial impact for consumers to a maximum of £10 per person per year. |
| Business     | Positive impact on food retailers due to savings from having to buy far fewer plastic carrier bags (currently given away for free) while sales of ‘bags for life’ and bin liners would increase. Detrimental impact for non-food retailers as it would lead to a pronounced shift to paper bags in these types of stores Detrimental impact for plastic bag manufacturers leading to job losses. It is unlikely that plastic bag manufacturers would switch to alternative products. |
| Waste        | A switch from plastic bags to paper bags under the proposed levy is estimated to increase the amount of waste produced to 5,409 tonnes per annum, a 0.26% increase in household waste. |
| Local Authorities | Would be set-up costs estimated at £3–4 million (to include a national |
The study suggests that the overall environmental impact of introducing a levy on plastic bags would remain very similar to the current situation as the benefits of reducing plastic carrier bag usage would be displaced by the increased use of paper bags. The AEAT Report (2005b) estimates that under a plastic bag levy there would be an increase in paper bag use by 174 million bags per year, with a total of 213 million bags being used annually.

<table>
<thead>
<tr>
<th>Area</th>
<th>Impact of a plastic bag levy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>information and awareness campaign) and administrative costs estimated at £3.5 million per year.</td>
</tr>
<tr>
<td></td>
<td>In general revenue would be expected to cover the on-going administrative costs.</td>
</tr>
<tr>
<td></td>
<td>There would be differences in revenues and on-going costs between local authorities i.e. smaller authorities receiving lower revenues without a proportional reduction in administrative costs.</td>
</tr>
</tbody>
</table>

The AEAT report assumes that if introduced the levy would lead to a 25% increase in the number of paper bags consumed (AEAT 2005b, p37) and a 90% reduction in the use of plastic bags (AEAT 2005a, p2). This assumption has been challenged by Friends of the Earth Scotland (2005):

“However we believe the study’s [AEAT Report] suggestion that a levy would lead to an increase in paper waste is misleading. The study has clearly underestimated the number of consumers that would either reuse carrier bags or switch to long-lasting canvas or cotton alternatives.”

The AEAT study assessed the main impacts of 4 different levy scenarios. These were:

- Levy of 10p on plastic but not paper bags covering all businesses – as Bill proposes
- Levy of 10p on plastic but not paper bags, covering all businesses except small and medium sized enterprises and charities
- Levy of 10p on plastic and paper bags, covering all businesses
- Levy of 10p on plastic and paper bags, covering all businesses except small and medium sized enterprises and charities

The AEAT report did not make any judgement on its findings. Its general conclusions in respect of the levy scenarios is that if the levy was applied to paper as well as plastic carrier bags, it would lead to greater environmental benefits across all eight indicators. The eight indicators are assessed in relation to the four levy scenarios in Chart 1.
Chart 1 Change in environmental indicators due to a levy

Environmental indicator:
- Consumption of non-renewable primary energy
- Consumption of water
- Climate change (emission of greenhouse gases)
- Acid rain (atmospheric acidification)
- Air quality (ground level ozone formation)
- Eutrophication of water bodies
- Solid waste production
- Risk of litter

Key assumptions: In scenarios 1A and 1B, there is a 25% switch from lightweight plastic bags to paper bags. In scenarios 2A and 2B, there is a 90% reduction in paper bag use.
POTENTIAL IMPACT OF THE LEVY

ECONOMIC IMPACT OF THE BILL

Manufacture, importation and distribution of carrier bags

The PM (2005, p7) acknowledges that some businesses unable to diversify into other products or markets might see job losses as a result of a levy on plastic bags. However the Bill does not provide any estimates for the number of businesses or individuals who may be affected.

The Carrier Bag Consortium (2004) estimates that anywhere between 300 and 700 direct jobs could be lost in Scotland as a result of a levy being imposed on plastic bags. This estimate includes jobs at BPI’s Greenock plant and Simpac in Glasgow. Other smaller manufacturers and importers may have to close, move operations to elsewhere in the UK (in Simpac’s case to Hull) or abroad, or diversify where possible into other plastic film products. Smaller enterprises are considered more likely to suffer greater impacts from a levy as it is anticipated that they have less capacity to adapt. Most of the bin liners produced in the UK are manufactured in England. It is considered unlikely that production could be switched to Scotland to compensate for some of the lost plastic carrier bag production. (AEA Technology 2005b, p36)

If the levy did lead to an increase in the use of paper bags, companies such as paper and polythene packaging supplies Smith Anderson may benefit from the increase in demand for paper bags. As discussed later in the briefing, administration of the levy may lead to employment opportunities in local authorities, with additional staff required to administer and enforce the levy. There may also be some job creation associated with the spending of the levy on environmental projects for example park rangers.

Retail Sector

The Scottish Retail Consortium (SRC) (2004) suggest in their response to Mike Pringle MSP’s Consultation that introducing a levy only in Scotland and not throughout the UK would lead to issues of competitive disadvantage. The SRC is particularly concerned for retailers who trade across the border and who as a result may have to operate and manage two completely different systems.

The AEAT report (2005, p37) suggests that if the levy was introduced and the number of plastic bags issued to customers declined and the sale of bin liners and bags for life increased, the food retail industry would make savings. They would have to buy far fewer carrier bags, which are then given away free and they would also profit from an increase in sales of bin liners and bags for life. The AEAT report also suggests that larger retailers are expected to find it easier to implement the system needed for compliance as they tend to have computerised systems and greater resources available. The report (2005, p37) does however suggest that those retailers who swap to paper bags may have increased overheads with paper bags taking up greater storage space and requiring more frequent deliveries.

The SRC (2004) also suggest that small-to-medium enterprises of which the SRC states there is a far higher proportion in Scotland than in the UK as a whole, would be affected more than larger companies. They suggest that small-to-medium enterprises are less able to tolerate higher levels of theft, less able to finance or investigate alternative packaging and less able to absorb additional costs of servicing customers. The AEAT report (2005b P37) highlights that for smaller retailers the levy may represent a greater burden as they may not have computerised systems.
Valpak (2004) suggested in their response to the consultation that many high street retailers do little or no direct advertising other than through the logos on their carrier bags believing that if a levy leads to a decrease in the number of plastic bags this may lead to an increase in companies using other forms of direct advertising.

**IMPACT ON CONSUMERS**

The PM (2005, p14) acknowledges that:

“the levy could affect those on a low income slightly more than it does other groups, (….)
depending on the choices made this may or may not necessarily be a financial impact,(….)
this could mean they are inconvenienced more than other groups, for example they are unlikely to have access to their own transport and therefore will require a suitable means to carry their purchases home. “

This potential impact of the levy is also acknowledged by GEM (George E. Morris & Co. Packaging Company) in their response to Mike Pringle MSP’s Consultation:

“The levy would be nothing less than a stealth tax, targeting those on low incomes who need carrier bags to get their shopping home on public transport.”(GEM 2004)

The AEAT report (2005b, p 34) details potential costs to consumers of the levy being introduced. This includes hidden costs which include the purchase, transport and storage costs of the bags, the amount of levy paid by consumers, cost of purchase of additional heavyweight bags and bin liners. The AEAT report (2005b, p34) calculates that the total additional financial burden of the levy per person would be an estimated £10.58 per year.

The SRC (2004) suggest in their response to Mike Pringle MSP’s consultation that the levy would lead to eventual price increases in products caused by the increase in store theft. The SRC suggest that the levy would make it easier for thieves to leave stores with goods which are not in the retailers labelled plastic bags.

**IMPACT OF COLLECTING THE LEVY ON LOCAL AUTHORITIES**

The Financial Memorandum (2005, p9) states that an estimated total revenue of £10million would be raised if the same 90% reduction in the use of plastic bags was achieved in Scotland as occurred when Ireland introduced its levy. The AEAT report (2005b, p45) calculates that the revenue total in Scotland would be £7.75million per year based on calculations that each person in Scotland would spend £1.53 on bags under the levy in a year.

The Bill enables local authorities to deduct collection costs from the revenue raised before they allocate the money to environmental projects. The Financial Memorandum (p11) estimates collection costs for local authorities to include:

- £10,000 staff cost per local authority for programming a computer system for levy (Bill states that it is hoped that costs will be reduced by using a single programme which all local authorities will use)
- additional staffing to administrator the levy may be required. The salary for additional administrative support is estimated at approximately £15,800 p.a.

The Financial Memorandum (2005, p11) also refers to the start-up costs for the administration of the levy but states that it is not possible to calculate how much it would cost each local
authority to update their computer system. The Bill also states that local authorities may wish to spend money on publicity though this is not a requirement of the Bill and no estimates are provided for how much money individual local authorities are likely to spend.

The Analysis of Responses to Mike Pringle MSP’s Consultation on the Proposed Environmental Levy Bill highlights that four local authorities who responded to the consultation raised concerns that the levy would be too administratively burdensome and costly for local authorities to enforce. Three respondents argued that the bureaucracy of 32 councils would cost more money than the revenues raised. Several local authorities also expressed concerns that revenue generated by the levy to be spent on environmental projects would decrease over time due to the reduction of plastic bag usage and local authorities would be left with the same level of administrative burden. The Association of Scottish Community Councils also suggested that there was likely to be different levels of administrative costs between rural and urban areas.

The AEAT report (2005b) undertook a basic estimation of costs which would be incurred if the levy were introduced:

**Table 5: Cost estimates for implementing environmental levy**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost calculation</th>
<th>Estimated cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education campaign</td>
<td>1 person for 1 year plus support (£60,000 x 32 local authorities)</td>
<td>£1-2 million</td>
</tr>
<tr>
<td>Set-up</td>
<td>1 person for 1 year plus support (£60,000 x 32 local authorities)</td>
<td>£2 million</td>
</tr>
<tr>
<td>Ongoing management</td>
<td>0.5 person/year/local authority (0.5 x 32 x £40,000 = £0.64 million)</td>
<td>£1 million</td>
</tr>
<tr>
<td></td>
<td>Billing Body team (4x £40,000 = £0.16 million)</td>
<td></td>
</tr>
<tr>
<td>Enforcement/policing</td>
<td>1 person/local authority plus support and travel (£40,000 x 32) + (£20,000 x 32) = £1.92 million</td>
<td>£2.5 million</td>
</tr>
<tr>
<td></td>
<td>Plus legal advice (£0.75 million)</td>
<td></td>
</tr>
</tbody>
</table>

Data AEAT Report (2005, p 44)

Several responses to Mike Pringle MSP’s consultation also argued that a central body such as the Revenue Commissioners used in Ireland would be the most cost effective method of collection. Fife Environmental Network (2004) stated that in order to reduce the cost of administering the proposed scheme, consideration should be given to making SEPA responsible for collecting the levies across Scotland and using the net income to fund projects into waste reduction, reuse and recycling. COSLA recommended that the Bill should require the Scottish Executive to fund all ‘start up’ costs.

It also states that local authorities are not best placed to implement and enforce the levy. COSLA believes that it would be a massive administrative exercise, requiring a database be kept up to date of every organisation in the area which issued plastic bags. Collection of the levy would also require council staff to have direct contact with every business which issued plastic bags.

**REVENUE GENERATED BY THE LEVY**

The Bill does not provide an estimate for the amount of revenue that would be available to be spent on environmental projects after deductions for collection costs. The AEAT report (2004b) estimates that taking account of set-up and annual costs for the levy, an estimated £4.25 million would be available annually to be spent on environmental projects.
Table 6: Estimated costs versus revenue for environmental levy

<table>
<thead>
<tr>
<th></th>
<th>Cash Flow (£ million) in year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Set-up costs</td>
<td>-3.50</td>
</tr>
<tr>
<td>Annual Costs</td>
<td>0</td>
</tr>
<tr>
<td>Revenue</td>
<td>0</td>
</tr>
<tr>
<td>Net</td>
<td>-3.50</td>
</tr>
<tr>
<td>Cumulative</td>
<td>-3.50</td>
</tr>
</tbody>
</table>

Table 6 estimates the same level of revenue being generated for each year. The AEAT report (2005, p 46) states that if carrier bag use fell to 5% of pre-levy volumes, half the revenue estimated in the table above would be generated, falling to around £3.8 million per year.

The Bill does not estimate how much revenue would be generated by individual local authorities or consider potential variations in the level of revenue generated between them. The AEAT Report suggests that there would be disproportionate costs between local authorities with the higher the population within a local authority, the greater the revenue collected.

ENVIRONMENTAL PROJECTS THE LEVY CAN BE SPENT ON

As detailed in the Bill (Section 8) the money raised from the levy has to be spent by the local authority on environmental projects meeting criteria set out in guidance issued by the Scottish Ministers. COSLA (2004) does not support ring fencing. It argues that individual councils are best placed to understand and appropriately respond to the particular needs of their community. On the other hand Keep Scotland Beautiful suggests in its response to Mike Pringle MSP’s consultation that ring-fencing money to be spent on environment projects by local authorities is a model already proving to be successful in the area of waste and recycling, with the Scottish Executive Strategic Waste Fund allocating money which can only be used for waste reduction, reuse and recycling implementation measures.

There is no definition in the Bill of an environmental project. The PM (2005, p2) does however state that the money raised would be spent on helping to address some of the environmental issues that arise from plastic bag use, which could include running local environmental initiatives such as litter clean ups and recycling campaigns.

Several responses to Mike Pringle MSP’s consultation provided suggestions for the environmental projects the levy should be spent on. Suggestions included projects aimed at helping achieve the targets in the National Waste Strategy, projects that promote the Waste Aware objectives, projects that enhance the local environment, environmental education projects and community environmental improvement projects.

A scheme currently in place which encourages money to be spent on local environmental projects is the Landfill Tax Credit Scheme (LTCS). Landfill operators are able to redirect 6% of their landfill tax liability to fund environmental projects. They can then claim a rebate of 90% of their contribution. Between October 1996 and June 2005 over £770m has been contributed to the scheme.

The LTCS must be spent in compliance with the Landfill Tax Regulations 1996 No. 1527. The regulations contain the following objectives for the projects the LTCS should be spent on:

- projects that involve reclaiming land, the use of which has been prevented by some previous activity
• projects that reduce or prevent pollution on land
• projects that provide or maintain public amenities or parks within 10 miles of a landfill site
• delivery of biodiversity conservation for UK species habits
• projects to restore or repair buildings for religious worship, or architectural or historical interest within 10 miles of a landfill site
• projects fund the cost of administrative, financial or other similar services, supplied to other enrolled Environmental Bodies.

The LTCS used to cover waste other amendments to the Landfill Tax Regulations have included the removal of donations to environmental projects which involve works which a person is under a legal obligation to carry out or aims to make a profit from.

Under the scheme over 13,840 environmental projects have been completed and 4,380 projects are active under the LTCS (ENTRUST 2005). Environmental projects registered with ENTRUST include:

• the removal of contaminated soil to allow residential development of a site
• improvements to public rights of way
• an environmental body providing accountancy services for another
• re-establishment of a red kite population including chick rearing, release and monitoring
• tree and hedgerow planting on land open to the public
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CGO (2005) Personal Communication 12 April 2005


DEFRA (2003b) What happens to waste Plastic and plastic bags webpage Available at: http://www.defra.gov.uk/environment/waste/topics/plastics.htm


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South African Department of Environmental Affairs and Tourism *Socio-Economic Impact of the Proposed Plastic Bag Regulations*