



**Environment and Rural Development Committee**

**24th Meeting, 2005**

**Wednesday 28 September 2005**

The Committee will meet at 10.30 am in Committee Room 1

1. **Environmental Levy on Plastic Bags (Scotland) Bill:** The Committee will take evidence at Stage 1 from—

Panel 1

Duncan McLaren, Chief Executive, Friends of the Earth Scotland;

Superintendent Mike Flynn, SSPCA;

Andrea Crump, Litter Projects Co-ordinator, Marine Conservation Society;

Panel 2

Richard Swannell, Head of Innovation, Waste and Resources Action Programme;

Allan Dryer, Senior Policy Officer, Life Cycle Assessment, SEPA;

Iain Gulland, Network Director, Community Recycling Network for Scotland; and

Nicki Souter, Campaign Manager, Waste Aware Scotland.

2. **Subordinate legislation:** The Committee will consider the following negative instrument—

the Registration of Fish Sellers and Buyers and Designation of Auction Sites (Scotland) Amendment Regulations 2005, (SSI 2005/438).

3. **Inquiry into rural development (in private):** The Committee will consider a draft report on its inquiry.

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The following papers are attached:

<u>Agenda Item 1</u>	
SPICe briefing paper: Environmental Levy on Plastic Bags (Scotland) Bill	<a href="#">ERD/S2/05/24/1a</a>
SPICe briefing paper: Plastic Bags Policy in Ireland and Australia	<a href="#">ERD/S2/05/24/1b</a>
Briefing paper ( <i>for members only</i> )	<a href="#">ERD/S2/05/24/1c</a>
Submission from Friends of the Earth Scotland	<a href="#">ERD/S2/05/24/1d</a>
Submission from SSPCA	<a href="#">ERD/S2/05/24/1e</a>
Submission from Marine Conservation Society	<a href="#">ERD/S2/05/24/1f</a>
Submission from Waste and Resources Action Programme	<a href="#">ERD/S2/05/24/1g</a>
Submission from SEPA	<a href="#">ERD/S2/05/24/1h</a>
Submission from Community Recycling Network for Scotland	<a href="#">ERD/S2/05/24/1i</a>
Submission from Waste Aware Scotland	<a href="#">ERD/S2/05/24/1j</a>
<u>Agenda Item 2</u>	
<a href="#">The Registration of Fish Sellers and Buyers and Designation of Auction Sites (Scotland) Amendment Regulations 2005, (SSI 2005/438).</a>	<a href="#">ERD/S2/05/24/2a</a>
<u>Agenda Item 3</u>	
Draft report ( <i>for members only</i> )	<a href="#">ERD/S2/05/24/3a</a>

# ENVIRONMENTAL LEVY ON PLASTIC BAGS (SCOTLAND) BILL

REBECCA LAMB

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.

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# SPICe briefing

22 September 2005

05/52



The Scottish  
Parliament

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## 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 administering 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 cities 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:

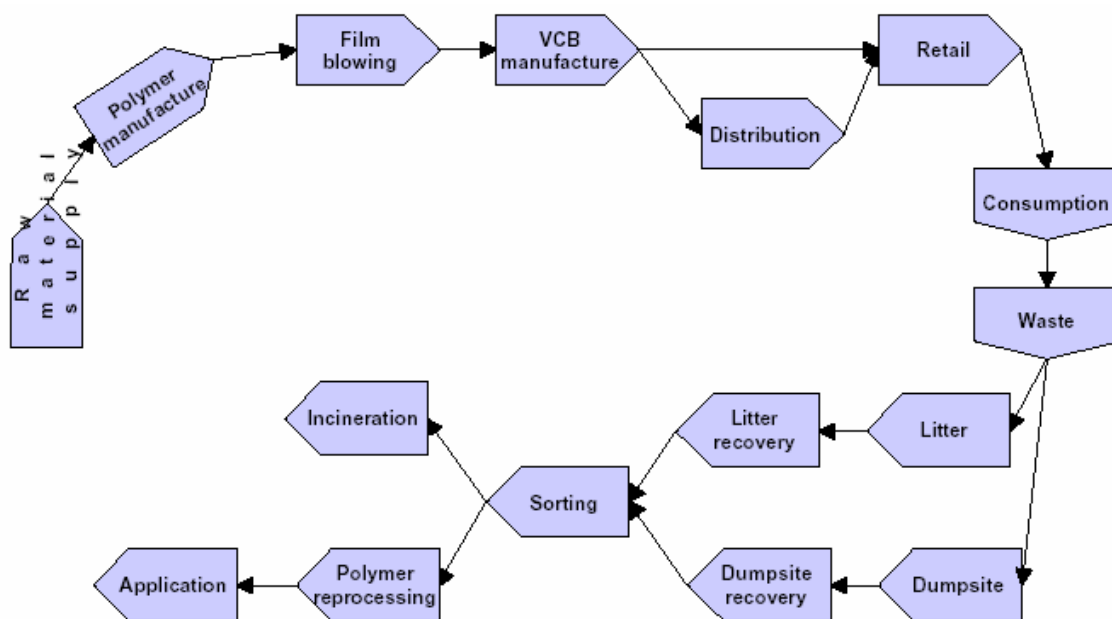
*“This [Irish] levy has resulted in a dramatic decrease of 90-95% in ‘single-use’ plastic bag consumption over the past year and a substantial increase in reusable bags . Although the levy does not apply to paper bags, these have not replaced plastic shopping bags in the supermarket sector.”*

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.

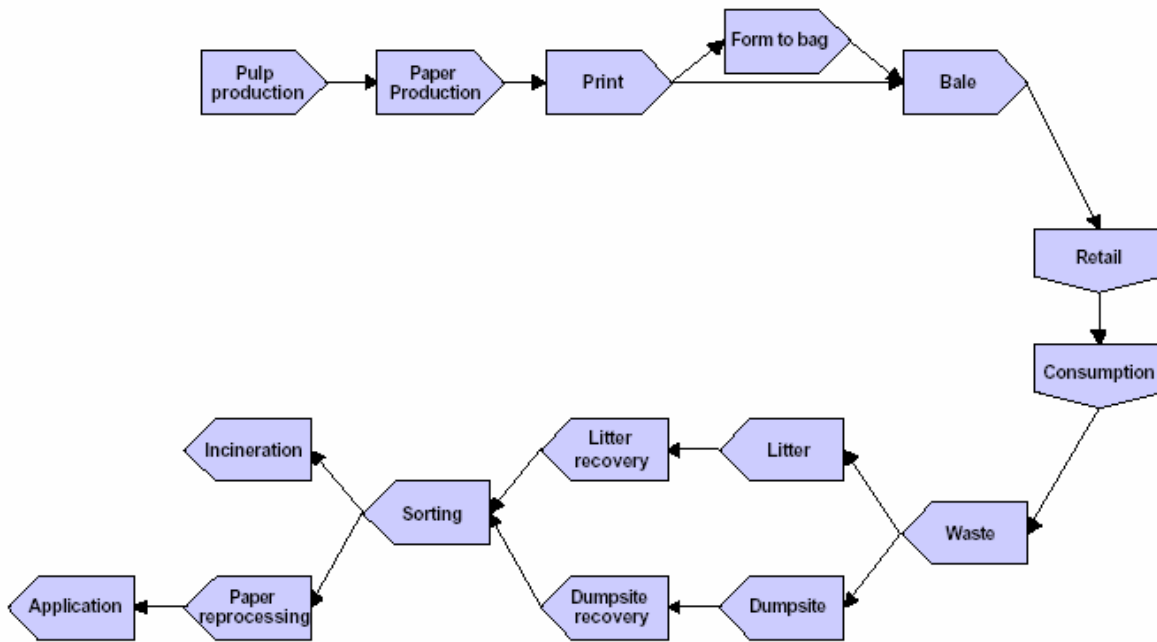
The South African Department of Environmental Affairs and Tourism, carried out a lifecycle analysis. Two diagrams from the report are detailed in Figures 1 and 2. It is important to note however that these figures make assumptions at some points, for instance that plastic and paper bags will either be 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**





**Figure 2 – Life cycle of a paper carrier bag**



## PLASTIC

### *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 "*incalculable*".

## **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 these 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.

## PAPER

### *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 million<sup>1</sup>.

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**

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

<sup>1</sup> 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*

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

\*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.<sup>2</sup>

<sup>2</sup> Sources: Companies' customer care departments, Pringle 2002 and AEAT (2005a,b,c) providing research and information services to the Scottish Parliament

**Table 2 : Retail companies carrier bag policies**

<b>Company</b>	<b>Carrier Bag Policy</b>
ASDA	<ul style="list-style-type: none"> <li>• 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</li> <li>• 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</li> <li>• in the following 4-5 weeks the single bags will be reintroduced, and a small charge levied on the 'bags for life'.</li> </ul>
Boots	<ul style="list-style-type: none"> <li>• issue 500 million carry out bags per year</li> <li>• stores in Ireland charge for plastic bags under the Irish plastic bag levy</li> <li>• no charge for plastic bags in UK</li> <li>• trialing a 'carrier bag for life' scheme in some stores</li> <li>• use notices at till points asking customers whether they need a bag</li> <li>• reduced bag thickness</li> <li>• reduced the range of sizes of bag available</li> </ul>
B & Q	<ul style="list-style-type: none"> <li>• October 2004 B&amp;Q in Scotland undertook a trial of charging customers 5p per plastic bag.</li> <li>• money raised from the charge (less VAT) goes to Keep Scotland Beautiful who use it for anti-litter promotional campaigns in Scotland.</li> <li>• demand for plastic bags in B&amp;Q Scotland stores has fallen by 85%.</li> <li>• trial was due to be reviewed in Spring 2005.</li> </ul>
Co-op	<ul style="list-style-type: none"> <li>• use a mix of HDPE and LDPE in Coop standard degradable carrier bags.</li> <li>• they do not use bags other than for mushrooms and certain pre-packed products.</li> <li>• offer a bag for life option for 10p</li> <li>• 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.</li> </ul>
Dixons	<ul style="list-style-type: none"> <li>• 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.</li> <li>• piloted using 100% recycled carrier bags – made from post-consumer plastic waste.</li> </ul>
Ikea	<ul style="list-style-type: none"> <li>• Edinburgh's IKEA store started charging 5p for its lightweight plastic carrier bags at Easter 2004.</li> <li>• money raised from the charge is ring-fenced for local charities to apply for, ideally with an environmental scheme in mind.</li> <li>• £6,000- £7,500 has been raised for charitable projects.</li> <li>• bag use has fallen by 3 million bags per year equating to a 95% reduction in plastic bags.</li> <li>• Sales of 'bags for life' high-density polyethene bags have increased</li> </ul>
John Lewis	<ul style="list-style-type: none"> <li>• use range of bags mainly high-density polyethene and some paper</li> <li>• in September 2005 due to introduce at a charge to customer a 100% reusable biodegradable bag manufactured from jute</li> <li>• employees are advised to issue bags sensibly when required</li> </ul>

<b>Company</b>	<b>Carrier Bag Policy</b>
Lidl	<ul style="list-style-type: none"> <li>• Lidl's UK stores charge 5p for lightweight carrier bags</li> <li>• charge is aimed at reducing the cost of the items sold in Lidl stores</li> </ul>
Next	<ul style="list-style-type: none"> <li>• in Ireland paper bags issued</li> <li>• in Ireland stores with the 'home' brand have found a need to double bag larger bulkier items, especially in wet conditions</li> <li>• UK low density polyethene bags issued</li> <li>• 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</li> </ul>
Virgin Megastores	<ul style="list-style-type: none"> <li>• in Scotland low density polyethene bags issued</li> <li>• in Ireland paper bags issued</li> <li>• all employees are trained to ask customers if they require a bag as part of the customer service programme</li> </ul>
Woolworths	<ul style="list-style-type: none"> <li>• currently charge 1p per carrier bag</li> <li>• money raised goes towards Woolworths charity Kids First</li> </ul>

## **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.

## SCOTLAND

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 AWP's, 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% respectively.

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**

Area	Impact of a plastic bag levy
Environment	<p>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.</p> <p>There would be some environmental benefits of introducing a levy on plastic bags these would include:</p> <ul style="list-style-type: none"> <li>• reducing the consumption of non-renewable primary energy</li> <li>• less acid rain (atmospheric acidification)</li> <li>• improve air quality (ground level ozone formation)</li> <li>• reduce level of solid waste production</li> <li>• reduce the risk of litter</li> </ul> <p>There would be environmental disbenefit in relation to:</p> <ul style="list-style-type: none"> <li>• increase in the consumption of water</li> <li>• increase climate change (emission of greenhouse gases)</li> <li>• 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)</li> </ul>
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	<p>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.</p> <p>Detrimental impact for non-food retailers as it would lead to a pronounced shift to paper bags in these types of stores</p> <p>Detrimental impact for plastic bag manufacturers leading to job losses. It is unlikely that plastic bag manufacturers would switch to alternative products.</p>
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

Area	Impact of a plastic bag levy
	information and awareness campaign) and administrative costs estimated at £3.5 million per year. In general revenue would be expected to cover the on-going administrative costs. 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.

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 4: Estimated annual impact on number of bags used if levy introduced**

	Change in number of bags used				Change in polythene/paper used (tonnes)	
	Lightweight carrier bag	Bag for life	Bin Liners	Paper Bags	Change in polythene used	Change in tonnes of paper used
Levy on plastic bags	679m decrease	15m increase	90m increase	174 million increase	3,484 tonnes decrease	8,893 tonnes increase
Levy on plastic and paper bags	679m decrease	21m increase	90m increase	35m decrease	3,214 tonnes decrease	1,779 tonnes decrease

Source: AEAT report

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):

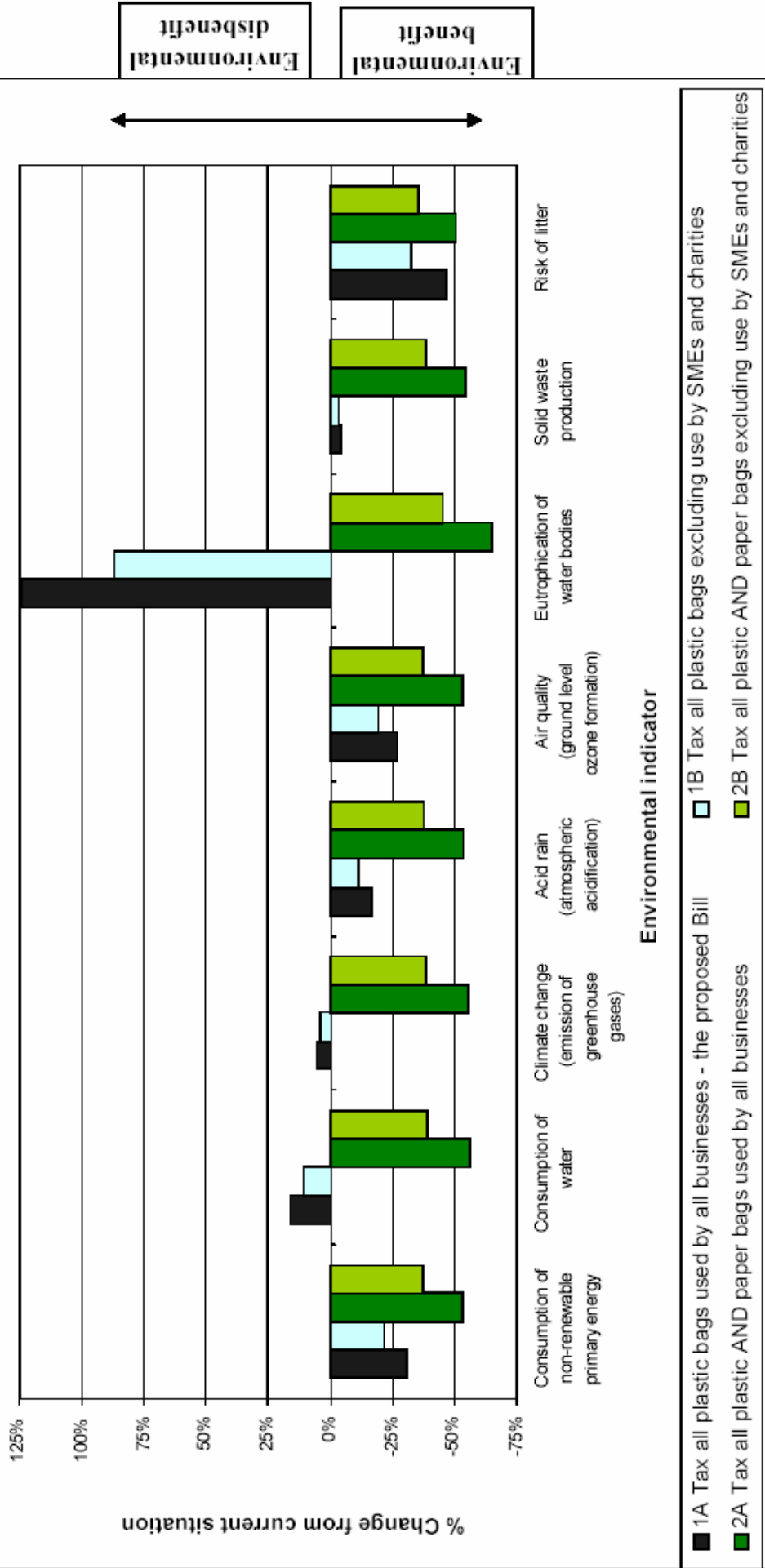
“However we believe the study’s [AEAT Report] suggestion that a levy would lead to an increase in paper waste is misleading. The study has clearly underestimated the number of consumers that would either reuse carrier bags or switch to long-lasting canvas or cotton alternatives.”

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 AEAT Report ;



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**

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

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**

	Cash Flow (£ million) in year			
	0	1	2	3
Set-up costs	-3.50	0	0	0
Annual Costs	0	-3.50	-3.50	-3.50
Revenue	0	7.75	7.75	7.75
Net	-3.50	4.25	4.25	4.25
Cumulative	-3.50	0.75	5.00	9.25

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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## PLASTIC BAGS POLICY IN IRELAND AND AUSTRALIA

REBECCA LAMB & MERRIN THOMPSON

This briefing contains two case studies showing different approaches to the issue of plastic bags. It examines the levy in place in Ireland, and the voluntary code in place in Australia. This briefing should be read alongside the SPICe Briefing on the Environmental Levy on Plastic Bags (Scotland) Bill (Lamb 2005)

*Scottish Parliament Information Centre (SPICe) Briefings are compiled for the benefit of the Members of the Parliament and their personal staff. Authors are available to discuss the contents of these papers with MSPs and their staff who should contact Rebecca Lamb on extension 85358 or email [rebecca.lamb@scottish.parliament.uk](mailto:rebecca.lamb@scottish.parliament.uk). Members of the public or external organisations may comment on this briefing by emailing us at [spice.research@scottish.parliament.uk](mailto:spice.research@scottish.parliament.uk). However, researchers are unable to enter into personal discussion in relation to SPICe Briefing Papers.*

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## **CASE STUDY - THE REPUBLIC OF IRELAND'S PLASTIC BAG LEVY**

On the 4 March 2002 a €0.15 tax on plastic bags was introduced at the point of sale in supermarkets, shops, service stations and all sales outlets. The levy means that all retailers are obliged by law to pass on the full amount of the levy as a charge to customers at the check-out.

### **INTRODUCTION OF THE PLASTIC BAG LEVY**

The introduction of a levy on plastic bags was strongly promoted by the then Minister for Environment and Local Government Mr. Noel Dempsey. Emphasis was placed on the levy being introduced not to generate revenue but to change consumer behaviour. The aim being to create a significant reduction in the use of plastic shopping bags and a subsequent reduction in the number of plastic bags which end up in the litter stream.

There was some opposition from the Irish plastic industry regarding the proposed levy. The Plastic Industries Association considered challenging the levy as being in breach of EU Packaging Waste Directive 1994. The Plastic Industries Association considered that a levy was permissible if it was part of a general system of taxation and applied equally to all products irrespective of origin. A levy applied to all bags sold in Ireland would be permissible. However they felt that the levy could be challenged as unfairly discriminate against imported products as it would only apply to plastic bag imports and would not be part of a general taxation system. (The Irish Times 1999)

An [Adjournment Debate was held on 14 June 2000](#) (Houses of the Oireachtas 2000) on the topic of the levy. Legislation enabling the Government to bring in a plastic bag levy was introduced through secondary legislation under powers granted by the Waste Management Act 1996. The Waste Management (Amendment) Act 2001 was signed into law in December 2001.

The Waste Management (Environmental Levy) (Plastic Bag) Regulations 2001 introduced the levy in March 2002. The levy was introduced then to enable retailers to put in place any necessary changes and training to implement the regulations and avoid any clash with the introduction of the Euro in January 2002.

### **PLASTIC BAG LEVY**

The Waste Management (Environmental Levy) (Plastic Bag) Regulations detail that the levy applies to all plastic bags except for those solely used to contain unpackaged or packaged:

- fresh fish and fresh fish products
- fresh meat and fresh meat products
- fresh poultry and fresh poultry products

Those solely used to contain unpackaged:

- fruit, nuts or vegetables,
- confectionery
- dairy products
- cooked food, whether cold or hot or
- ice

and provided that such bags are not greater than dimensions:

- 225mm in width (exclusive of gussets)
- 345mm in depth (inclusive of any gussets)
- 450mm in length (inclusive of any handles)

Other exemptions include plastic bags designed for reuse costing more than €0.70 each and plastic bags containing goods or products sold on board commercial aircraft and ships. Items sold in the secure 'duty free' zone of airports in Ireland, irrespective of whether or not the goods are 'duty free' are exempt. Items sold in the departure/arrivals zones of the airport are not exempt.

## **IMPLEMENTATION OF THE PLASTIC BAG LEVY**

Responsibility for collecting the levy rests with the [Office of the Revenue Commissioners](#) (the Irish equivalent of the Inland Revenue). The start-up costs incurred by the Revenue Commissioners relating to the introduction of the plastic bag levy including the public information campaign undertaken by the Department of Environment Heritage and Local Government is estimated to have amounted to €1.56 million by December 2002. Money raised from the levy was used to offset these costs (Dáil Éireann 2002). Annual administrative costs for the levy amount to €350,000 (Convery 2005)

The requirement that all retailers pass on the full amount of the levy to customers, is enforced by local authorities. Local authority enforcement officers have the right to enter any retail premises, conduct any searches or investigations considered necessary and inspect or remove any records, books and documents for the purposes of any proceedings in relation to the levy.

The collection of the levy has been integrated into the VAT collection systems. Retailers must submit a return to the Revenue Commissioners. The retailer then authorises the Revenue Commissioners to debit the amount payable from their account.

The major UK department stores were initially reluctant to implement the levy, because their centrally controlled accounting systems would need to be adapted. Some stores have bypassed the issue by going over exclusively to paper bags.

## **COLLECTING THE PLASTIC BAG LEVY**

The Revenue Commissioners are responsible for collecting the plastic bag levy. In 2003 a sum of €12.7m was collected in respect of the levy with revenue expected to increase in 2004 (Dail Eireann 2005). The Revenue Commissioners receive an agency fee for collecting the levy. The Revenue Commissioners initially established a mailing list of retailers from information they held on all traders. The mailing list has been continuously revised from information supplied by traders and Local Authorities.

The Collector General's Office (CGO) within the Revenue Commissioners carried out an examination of all traders on the mailing list as at 31 March 2004. Resulting from this examination they reduced their mailing list to 6635 retailers. At the time of the examination 4285 had filed returns. The CGO then proceeded to issue estimates of the amount of levy they believed the 2350 retailers who had not filed returns should have collected. A number of traders responded to the estimates and informed the CGO that they no longer supplied plastic bags. These traders were then removed from the mailing list. A small number of traders paid for all periods following issue of the estimates. At the time of writing the CGO are in the process of contacting and enforcing the estimates that were issued to traders where they received no response.

The CGO stated that for quarters 30th June and 30th September 2004 the number of returns received was 4956 and 4418 respectively, giving a compliance level of 75% and 67% respectively. It is important to note however that these numbers do not fully reflect compliance

rates. Retailers that were removed from the mailing list following the CGO's issue of plastic bag levy estimates to retailers are not allowed for. The CGO stated that all the major retailers are 100% compliant in respect of returns filing and that they expect that collection compliance in money terms is well over 90% (CGO 2005).

## **PROSECUTION**

In June 2005 the Virgin Megastore Chain became the first retailer in Ireland to be successfully prosecuted for not charging a customer the 15c plastic bag levy. The Virgin store in Tallaght was convicted and fined €150, with one month to pay, in an action brought by South Dublin County Council. The store was prosecuted for issuing a plastic bag free of charge to a customer who purchased a CD. Virgin Retail (Ireland) Ltd pleaded guilty to the charge. In their defence they explained that at the time of the offence the shop was in 'a transition' from plastic bags to paper.

## **REVENUE RAISED FROM THE LEVY**

Money raised from the levy is ring fenced to the Environment Fund controlled by the Minister for the Environment, Heritage and Local Government. This fund is used to support waste management, litter and other environmental initiatives as well as offsetting costs incurred through the administration of the levy. There has been an increase in revenue between 2002 and 2003. Convery (2005) argues that the increase in revenue is most likely due to delays in the implementation of the levy by some retailers. Alternatively it can be argued that the increase in revenue demonstrates a change in consumer behaviour with consumers now being more willing to buy plastic bags than they were when the levy was first introduced.

In 2003 the Waste Management (Environment Fund) (Prescribed Payments) Regulations 2003 enabled the environment fund to be spent on:

- protection of environment and/or sustainable development undertaken in Ireland or on an international or trans-national basis
- initiatives for the prevention, reduction, recovery, recycling or reuse of waste
- meeting national mandatory and voluntary contributions to national and international organisations concerned with the protection of the environment and or sustainable development

## **IMPACT OF THE LEVY**

The AEA Technology (2005, p8) report states that whilst the number of paper bags used in Ireland has risen under the levy, this increase is reported to be mainly in 'high street' non-food retailers. Paper bags however have not replaced plastic bags (reusable or disposable) as the preferred bag of choice.

JJ O'Toole Ltd (2004) a paper and plastic packaging firm in Ireland state that prior to the Irish levy 35% of revenues derived from the sale of plain and printed plastic bags. This business was split with 20% for retail food use and 15% to retail non-food use (fashion outlets). JJ O'Toole state that their company saw their sale of plastic bags for food retail use disappear overnight and the non-food area switch to paper bags. This led to a reduction in their workforce from 35 to 26 staff. However JJ O'Toole claim that the impact on local manufacturers of plastic bags was non-existent as lower prices offered by far eastern countries had led to their closure prior to the levy being introduced.



The Retail Grocery and Allied Trades Association maintain that retailers have suffered costs of stolen wire baskets and trolleys, used in place of carrier bags (Thomas Crosbie Holdings Limited 2002)

Reports indicate that sales of other bags have increased, for instance pedal bin liners and nappy bags (Irish Examiner 2003). British Polythene Industries PLC (2004) state that their sales of swing and pedal bin liners to Irish supermarkets since the introduction of the Irish Levy have increased by around 75%. BPI claim in their consultation response that the introduction of bags for life has not been successful as they have not seen a marked reduction in the volume of sales of free of charge carrier bags.

The British Retail Consortium (2004) claims that the Irish levy has led to an increase in shoplifting due to the fact that thieves are less conspicuous bringing in their own bags.

There has been on average a 94% reduction in plastic bag consumption in Ireland since the levy was introduced (McDonnell 2005). Below is a table detailing estimated low and high ranges of pre-levy consumption:

**Table 1: Decline in Per Annum Plastic Bag Consumption:**

	<b>Pre-Levy Consumption Levels (bags per annum)</b>	<b>Post-Levy Consumption Levels (bags per annum)</b>	<b>Percentage Decline in Plastic Bag Usage</b>
<b>Median Estimate</b>	<b>1.26 Billion</b>	<b>76.4 Million</b>	<b>93.94%</b>
<b>High Range Estimate</b>	<b>1.35 Billion</b>	<b>76.4 Million</b>	<b>94.34%</b>
<b>Low Range Estimate</b>	<b>1.08 Billion</b>	<b>76.4 Million</b>	<b>92.93%</b>

Source: McDonnell 2005

Convey (2005) highlights research carried out by Fehily et al which analysed the impact of the tax on the plastic bag industry. They estimated that in 1999, 79% of the plastic bags consumed were imported. The remaining 21% were produced by four plastic manufacturing firms operating in The Republic. Since then one firm has gone out of business causing the loss of 26 jobs.

Proposals to introduce further levies have been mooted in Ireland. These include proposals for a levy on polystyrene food wrapping, chewing gum and cash machine receipts.

# CASE STUDY – AUSTRALIA’S VOLUNTARY CODE OF PRACTICE

## INTRODUCTION

In Australia responsibility for environmental policy is shared between the Commonwealth and State and Territory governments. The primary policy instrument addressing the environmental impacts of consumer packaging is the National Packaging Covenant, which uses a voluntary regulatory arrangement between all levels of government and key stakeholders in the packaging supply chain. The Covenant is overseen by the Environment Protection and Heritage Council which is comprised of Environment Ministers from each of the Commonwealth, State and Territory governments (Department of Environment and Heritage 2005).

In response to continued government and public concern, and following research and public consultation, in December 2002 the Council agreed to a number of actions in respect of plastic bags. These included that retailers would develop and implement a National Code of Practice for the Management of Plastic Retail Carry Bags by April 2003, with targets for reduction of bag use as well as recycling. Ministers challenged retailers to meet the following targets:

- 50% reduction in the number of High-Density Polyethene (HDPE) plastic bags used
- 50% recycling rate for HDPE plastic bags
- 90% participation rate of retail chains and 25% participation rate of small retailers in the Code of Practice.

The Council subsequently endorsed the code of practice developed by the Australian Retailers Association, the national industry body representing retailers. However, Ministers noted that if the code were not implemented, or the targets not achieved, they would reconsider mandatory measures. They also approved that legislative options including a potential levy be further developed so that they could be ready for further consideration in light of the impact of the code. At the same time, the Council indicated its support for phasing out lightweight single use HDPE bags (Environment Protection and Heritage Council 2003).

The code of practice covers only HDPE bags and runs from 10 October 2003 to 31 December 2005. As the code enters its final stages, broad directions for the future have recently been signalled by government, including the phasing out of plastic bags and other regulatory options (Environment Protection and Heritage Council 2005).

## THE VOLUNTARY CODE EXPLAINED

### ***Commitments in the code of practice***

The Australian Retailers Association produced the code of practice ‘in response to strong government pressure to reduce bag use and increase recycling’ (Australian Retailers Association, online).

The commitments in the code of practice include:

- a 25% reduction in HDPE bags issued by the end of 2004
- a targeted reduction of 50% in HDPE bags issued by the end of 2005
- an increase in the in-store recycling rate to 15% and in the combined in-store and kerb-side recycling rate to 30% by the end of 2005
- the introduction of recycled content plastic bags
- ensuring the availability of multiple use bags in stores

- providing easily accessible and identifiable recycling stations in supermarkets and shopping centres
- objective auditing of compliance with the code (Australian Retailers Association, 2003).

### ***How the code works***

The code divides retailers into two groups:

**Group 1 (supermarket) retailers** - include the major and smaller supermarket chains along with certain independent supermarkets which together account for around 50% of current lightweight bags issued. A target was set for 90% of relevant Association members to sign up to and participate in the code. In becoming signatories, these members commit themselves to:

- the reduction targets noted above
- pursuing any further achievable reductions, subject to review, beyond December 2005
- participating in review of the results of the targets
- developing and implementing viable and environmentally acceptable reusable options to support the reductions
- supporting and promoting initiatives to support the recycling targets
- use of HDPE bags with recycled content
- investigating the development of viable degradable and reusable options
- collaborating to develop common standards for reusable bags
- providing audited results on their reduction and recycling levels (Australian Retailers Association 2003).

**Group 2 (non-supermarket) retailers** – include all other businesses using lightweight HDPE bags, generally smaller retailers. These retailers are not required to commit to the entire code, but are encouraged to ‘apply best endeavours’ to implement the following initiatives:

- staff training to support the code’s aims
- selling reusable bags if practicable
- advising customers that the retailer is a code signatory and supports the code’s aims
- making information available to customers about how they can participate
- providing recycling bins if practicable
- providing recycled content bags if possible
- reporting on use of plastic bags (Australian Retailers Association undated).

### ***Community behavioural change campaign***

The code of practice was supported by a national community awareness campaign developed and implemented by the Australia Retailers Association in conjunction with government and non-government environmental agencies and the National Packaging Covenant Council. It was largely financed by the Group 1 organisations.

The campaign aimed to change consumer and retailer behaviour to refuse, reduce, reuse and recycle bags, and to raise awareness of the environmental impacts of bag use. It targeted the broader community, retailers, local authorities, community groups and schools (Australian Retailers Association 2003).

The 'Say No to Plastic Bags' campaign commenced in January 2004 and utilised television, radio and outdoor advertising, along with public relations, direct marketing and a campaign website (Australian Retailers Association 2004a).

## **EVALUATION OF THE IMPACT OF THE VOLUNTARY CODE**

At present data on use of plastic bags is not systematically collected in Australia. The first findings presented below are taken from reports of the Australian Retailers Association, while the second use more reliable figures from both manufacturers and retailers compiled by the environmental consultants Nolan ITU. It is understood that the code of practice has not been evaluated in terms of its impact on the environment, for example in terms of litter production, consumption of non-renewable energy and solid waste production. Similarly, no findings are available on the extent to which the code has led to an increase in consumption of paper bags.

### ***Australian Retailers Association figures***

The Australian Retailers Association uses the audited figures of Group 1 retailers to compile results on the impact of the code. The number of lightweight HPDE bags issued in the 2002 calendar year is used as the base rate (Australian Retailers Association 2003). Only Group 1 (supermarket) retailers are reported on, with figures supplied by four major supermarket chains. It is not clear what proportion of Australian supermarkets this represents, but the report does state that a number of smaller chains were unable to provide audited figures (Australian Retailers Association 2004a). The figures below have been estimated to cover only 50-60% of total bag usage (Nolan ITU 2005).

(a) As of the end of June 2004, Group 1 retailers achieved a **reduction of 29%** in the annualised rate of HDPE bags issued, as compared to a target rate of 25%. The recycling rate for HDPE bags returned in store as a proportion of total HDPE bags issued was 5%, as compared with a target of 15% by the end of 2005 (Australian Retailers Association 2004a).

(b) As of the end of December 2004, Group 1 retailers achieved a **reduction of 26.9%** in the annualised rate of HDPE bags issued. The recycling rate for HDPE bags returned in store as a proportion of total HDPE bags issued was 3.2%.

The difference between the June and December rates - notwithstanding that the annual target was still exceeded - was ascribed to the effect of December trading.

It should be noted that in response to concerns among retailers, the auditing methodology is now being reviewed in order to provide for more consistent and accurate reporting of figures throughout the year (Australian Retailers Association 2004b).

### ***Results in respect of other commitments in the code***

The 2004 End of Year Report also reports against a range of other commitments in the code:

- develop and implement viable and environmentally acceptable reusable options to support the reductions – all four Group 1 retailers developed and implemented reusable options
- make available in stores multiple use bags and customer information on reusable options – all four Group 1 retailers have multiple use bags available and offer customer information on reusable options.
- use of HDPE bags with recycled content – all four retailers use HDPE bags containing recycled content, however limited supply of recycled materials is reported to restrict use.
- accessible and identifiable recycling stations – all four retailers provide recycling stations to customers.

- training of checkout staff to build and maintain awareness of, and support the promotion of alternatives – three retailers provided training to staff as described in all stores while one provided it in some stores (Australian Retailers Association 2004b).

### *Group 2 signatories*

While the code set a target of 25% of the Australian Retailers Association's eligible members becoming Group 2 signatories by the end of 2004, a very limited response of 4% was achieved on this front (Australian Retailers Association 2004b).

### ***The Nolan ITU study of Plastic Retail Carry Bag Use***

Further findings on the reduction in use of plastic bags over the life of the code of practice are provided in a study by Nolan ITU commissioned by the Commonwealth Department of Environment and Heritage in 2004. The interim report of the study was published in March 2005.

As noted above, data on plastic carry bag use is not collected systematically in Australia, making it impossible to measure accurately (Nolan ITU 2005). Nevertheless, the Nolan ITU study is considered to be more objective than those of the Australian Retailers Association (ARA) on a number of counts:

- the ARA focuses on lightweight HDPE carry bags (an estimated 85% of total carry bags in 2002) while the Nolan ITU study utilised data on all plastic bags including LDPE 'boutique' carry bags
- the ARA used only figures supplied by some signatories to the code, while the Nolan ITU study utilised data from bag manufacturers and importers supplemented by retailer data across many retail sectors
- the Nolan ITU study was not adjusted for store growth
- the ARA figures are partly based on bag orders rather than bag usage and may have been calculated using December data only (Nolan ITU 2005).

Nolan ITU's calculations indicate a reduction of 20.4% in HDPE plastic bag consumption between 2002 and 2004. When both HDPE and LDPE bag consumption are considered, a total reduction of 19.4% was achieved over the same period (Nolan ITU, 2005).

The study also presented data on HDPE plastic bag consumption across different retail sectors. It should be noted that the data were based on the views of manufacturers and importers and are thus indicative only. While supermarket consumption fell by an estimated 25% between 2002 and 2004, it fell by only 10% in the general merchandise and apparel sector and by the same proportion in the fast food, convenience and service station sectors (Nolan ITU 2005).

The Nolan ITU report concludes that there is clear evidence of a reduction in bag usage in Australia, especially in respect of HDPE lightweight plastic bags. It notes that the less significant reduction in use of LDPE bags reflects the absence of a national policy to reduce these, and thus a lower level of activity by relevant retailers.

The report also notes industry feedback that reductions achieved to date are the result of increased consumer awareness, improved staff training and greater availability and use of heavier duty reusable bags. However, it notes the concern of some retailers that gains to date are the result of 'harvesting of the low hanging fruit', with the target of 50% reductions in 2005 likely to be much harder to achieve. This is seen as only possible with more concerted effort across all retail sectors over that period (Nolan ITU 2005).

## **Planet Ark Study of Plastic Bag Use in Non-Supermarket Outlets**

The Australian Retailers Association has noted that non-supermarket retailers must be much more engaged with the code of practice if reduction targets are to be achieved. Not only has take-up of the code of practice among these retailers been poor to date; the reductions achieved in the issuing of HDPE plastic bags by supermarkets have meant that the proportion of bags being issued by non-supermarket retailers has increased as a proportion of all bags issued (Australian Retailers Association 2004a).

The non-government environmental organisation Planet Ark recently reported on a survey funded by the Department of Environment and Heritage investigating the reasons behind poor take-up of the code among these retail sectors. The survey found that 47% of retailers questioned were not aware of the code of practice. Potential reasons for poor take-up included:

- communication – this is hampered by low levels of industry association membership among retailers, and by poor resources among some associations for communicating with members
- cost – 51% of retailers said plastic bags were cheap, while 40% said that they did not use plastic bag alternatives because they were more expensive
- habit and convenience – 43% said that they used plastic bags because they were convenient, while 46% said they did it out of habit
- the ‘impulse buying’ that characterises the non-supermarket sector means that customers are less likely to have their re-usable bag with them when they make these purchases.

Nevertheless, the report contends that a well targeted campaign by government, industry and environmental groups should achieve substantial reductions in bag use by *large national* non-supermarket retail chains, whose ability to change is enhanced through centralised systems and leadership.

The report points to significant success among some non-supermarket retailers in the fast food, hardware and clothing sectors who have become ‘role models’ for plastic bag reduction on their own initiative. In addition, a number of towns have gone ‘plastic bag free’ across the range of sectors.

Recommendations of the report include:

- greater awareness raising among retailers of the code of practice through a tailored campaign directly communicating with smaller retailers, with strategies informed by an in-depth study of each retail sector
- an initial focus on national retail chains within those sectors where adaptable role models already exist, with active encouragement of retailers to take up the initiatives of their competitors
- inclusion of LDPE bags in the code of practice
- further consideration of financial disincentives to plastic bag use
- funding for the expansion of the ‘plastic bag free towns’ program
- clear messages from government that it will pursue mandatory solutions the voluntary code does not achieve the set targets
- creation of an advisory service for non-supermarket retailers to educate retailers on the various ways to reduce plastic bag consumption
- awareness raising among retailers of the cost-savings associated with reduced issuing of plastic bags

- staff training that targets those responsible for procuring plastic bags as well as checkout staff
- greater promotion and dissemination of the Australian Retailers Association's retailers training kit
- a publicity campaign raising awareness about plastic bag alternatives, matched with improved in-store promotion of such alternatives, particularly near the till
- introduction of truly biodegradable bags for purchases where re-usable bags are not appropriate, such as take-away food – based on significant increases in the use of 'degradable' bags that may in fact not be so (Planet Ark 2005).

## **CONCLUSION: CHALLENGES FOR THE REMAINDER OF THE LIFE OF THE CODE AND FUTURE GOVERNMENT ACTIONS**

In both its January to June 2004 and End of 2004 Reports, the Australian Retailers Association acknowledges a much greater challenge in achieving the 2005 reduction target of 50%. Having attained a significant community response to its initiatives in the first year, the Association notes the imperative to ensure that momentum is maintained, particularly through customers remembering to take their reusable bags with them when they go to the supermarket. To this end, community education is continuing throughout 2005 with a new campaign focusing on people aged under 40, who are understood to be the greatest challenge. The campaign is primarily using television, with increased focus on non-metropolitan areas. The key messages of the campaign are:

- Say no to plastic bags
- Switch to reusable bags
- Use reusable bags more often, and not just in supermarkets
- Recycle unused and old plastic bags
- Get involved and take responsibility (Australian Retailers Association, 2004b).

Overall, the findings cited above 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.

The Australian government have not yet given a clear indication of future action in respect of plastic bags after the code expires at the end of 2005. Broad directions were signalled in an Environmental Protection and Heritage Council communiqué in July, in which the Council reported that the Australian Retailers Association had developed a draft agreement to phase out HDPE plastic bags by the end of 2008, and that retailers were seeking supportive legislation to eliminate plastic bags from January 2009. The proposed agreement will be considered by the Council in early 2006 (Environment Protection and Heritage Council, 2005). The communiqué notes:

*“Ministers have indicated that any decision to pursue further voluntary reductions between 2006 and 2008 will be influenced by the ability of Group 1 retailers to reach their 50 per cent target by the end of 2005. Ministers have also asked for regulatory options to be further developed by early next year.”*

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SUBMISSION FROM FRIENDS OF THE EARTH SCOTLAND

**Evidence to the Environment Committee on Environmental Levy on Plastic Bags  
(Scotland) Bill**

***Duncan McLaren, Chief Executive, Friends of the Earth Scotland  
September 2005***

Friends of the Earth Scotland (FoES) welcomes the opportunity to present evidence to the Environment and Rural Development Committee in support of Mike Pringle's proposed Environmental Levy on Plastic Bags (Scotland) Bill. FoES believes that the Bill could play an important part in tackling resource use and delivering sustainable development. While only making up a small percentage of the overall waste stream, plastic bags are a highly visible and easily understood symbol of a throwaway culture that all sections of the community come into contact with. Putting a levy on their use would, we believe, contribute to a change in consumer attitude and (more importantly) behaviour in relation to the issues of resource use, waste and litter. It would show the public that the Scottish Executive was willing to take action to change consumer behaviour and predispose the public to further environmental initiatives in the future. The extremely positive public response to a similar levy in Ireland bears this out.

**1. To what extent are plastic bags a problem in terms of waste management and their impact on the environment, including wildlife?**

In Scotland, it is estimated that we use (and then sooner or later throw away) between 690 and 860 million plastic bags every year.<sup>1</sup>

This forms part of an overall rate of resource use well beyond sustainable levels. A recent calculation of Scotland's 'ecological footprint' showed that if the rest of the world were to consume resources at the same rate as we do then we would need two more planets to sustain us.

Despite an increase in recycling rates, household waste on Scotland is increasing at a rate of 3% per year. While plastic carrier bags (along with other plastic films) make up only 4.37% of the household waste stream in Scotland<sup>2</sup>, it is vital that attitudes towards using and throwing away resources are changed. They are a highly visible symbol of our attitude toward resource use (see also answer to question 2).

Plastic bags take up to 1000 years to break down and thus are highly persistent visual pollutants. As noted by the British Antarctic Survey plastic bags have gone "from being rare in the late 80s and early 90s to being almost everywhere from Spitsbergen 78° North [latitude] to Falklands 51° South [latitude].....they'll be washing up in Antarctica within the decade."<sup>3</sup>

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<sup>1</sup> AEA Technology Environment: Proposed plastic bag levy – extended impact assessment final report. Vol. 1. Commissioned by Scottish Executive, 2005

<sup>2</sup> SEPA, cited in AEA Technology Environment: Proposed plastic bag levy – extended impact assessment final report. Vol. 1. Commissioned by Scottish Executive, 2005

<sup>3</sup> [http://news.nationalgeographic.com/news/2003/09/0902\\_030902\\_plasticbags.html](http://news.nationalgeographic.com/news/2003/09/0902_030902_plasticbags.html)

Plastic, including plastic bags, are a major hazard to wildlife. According to the Marine Conservation Society's Beachwatch 2003 Report, based on 135 km of UK coastline, plastic items accounted for over 50% of the litter found, including 5,831 plastic bags, the equivalent of 43 plastic bags for every kilometre of coastline surveyed.<sup>4</sup>

In the recent survey coordinated by the Marine and Coastal Zone Research Institute in the Netherlands, scientists found that 96% of dead fulmars studied had plastic fragments in their stomachs, double the amount found in fulmars in the early 1980s.<sup>5</sup>

For some local authorities in Scotland plastic bags are a major contaminant in recycling and prevent other household waste uplifted for recycling being successfully recycled.

## **2. To what extent is the proposed levy likely to affect consumer behaviour and what alternatives to plastic bags are people likely to adopt? Is a levy a suitable method of addressing the problem?**

FoES believes that a levy is a suitable method of addressing the problem of single use of lightweight plastic carrier bags.

The Irish tax, introducing a 9 pence per plastic bag levy, led to a dramatic reduction in plastic bag consumption: 90% initially, rising more recently to 95%.<sup>6</sup> An upstream levy in Denmark led to a 66% reduction in consumption, suggesting that the downstream levy applied at the point of consumption is more effective in changing behaviour than schemes designed to change retailer behaviour. One can realistically hypothesise that a voluntary scheme would be even less effective than an upstream levy.

The Irish tax was explicitly designed as a downstream tax so as to maximise the educational effect: emphasising that individual behaviour change is important, and can be enabled and supported by government interventions including taxation. It is impossible to quantify this effect, but because most people currently receive free plastic bags when shopping, a levy would result in the exposure of most individuals to an important environmental message. The ease of response to a levy, as demonstrated by the high elasticity of response in the Irish case, means that individuals exposed to this message would likely be well predisposed to future environmental messages from the Executive.

There appears to be no definitive evidence from Ireland on the extent to which retailers replaced plastic bags with other bags – such as paper, but anecdotal evidence overwhelmingly suggests that consumers increased use of reusable bags. This is reinforced by reported savings by retailers as a result of reduced purchase of bags. In other words retailers appear to be mainly using fewer plastic bags, rather than attempting to offer substitutes.

The extent to which consumers increased purchases of kitchen tidy bags where they previously used plastic bags has been estimated in the Irish case. This suggests a 77% increase in sales of plastic kitchen tidy bags.<sup>7</sup> The 90% reduction in plastic check-out bags equates to a reduction of one billion plastic bags and a 77% increase in kitchen tidy bags equates to an increase of 70 million of these bags. The net effect is an overall reduction in plastic bag use of 930 million bags, with apparently insignificant levels of substitution by paper bags.

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<sup>4</sup> <http://www.wildlifebritain.com/news.cfm/id/232>

<sup>5</sup> [http://www.guardian.co.uk/uk\\_news/story/0,3604,1190058,00.html](http://www.guardian.co.uk/uk_news/story/0,3604,1190058,00.html)

<sup>6</sup> AEA Technology Environment, op cit.

<sup>7</sup> Convery, F and S McDonnell, 2003. University College Dublin Environmental Studies Research Series Working Paper 03/01. *Applying Environmental Product Taxes And Levies – Lessons From The Experience With The Irish Plastic Bag Levy*. This is the primary source for estimates of direct and substitution effects.

A survey undertaken in Ireland shows that householders supported the levy with the majority feeling 'that the impact of the levy in terms of convenience at checkouts and generally was enhanced,' 'Virtually all respondents indicated that the impact on the environment was positive, producing a noticeable reduction in plastic bags 'in the environment'.<sup>8</sup>

### Ireland - Survey of Householders, March 2003

% of total surveyed	Impact at checkout	Convenience	expense	Environmental Impact
Positive	27	31	14	90
Neutral	60	45	60	8
Negative	13	24	26	2

No discernible variation in these responses related to socio- economic status or degree of environmental awareness are reported.<sup>9</sup> Given that the net costs to both consumers and business are negative or minimal the study reports that there are unlikely to be negative distributional effects. The findings of the household survey did not reveal that even those unemployed felt it was 'unfair.'

A public opinion poll carried out in Britain by MORI in 2003 showed that almost two thirds of the population support paying 10 pence for a carrier bag for their shopping.<sup>10</sup> MORI expressed surprise at the level of support given the UK's usual sensitivity to anything perceived as a 'stealth' tax. The survey also showed there is support for the idea from all political perspectives, with 73% of Liberal Democrat voters and 63% of Labour and Conservative voters being in favour of the charge.

### 3. What are the likely environmental impacts of the proposed levy, including the likely impacts of alternatives?

Equivalent results to those in Ireland, achieved in Scotland, would lead to an estimated net saving in the order of 800million bags per year.<sup>11</sup> Most plastic bags are manufactured from ethylene which is a non-renewable resource. The energy embodied and consumed in the manufacturing process of a typical singlet high density polyethylene – typically used in supermarkets - is significant at 0.48MJ per bag (with 8.7 bags equivalent to driving a car 1 km). In terms of energy use a reduction of 800 million bags saved would be equivalent to a reduction of 92 million car kilometers. Low density polyethylene bags typically used by other retailers such as fashion stores are significantly more energy intensive.<sup>12</sup>

Assuming one in eight bags is LDPE and the rest HDPE, the net environmental benefits would be<sup>13</sup>: 480million MJ energy, 12,800t-CO<sub>2</sub> equivalents and 4,270 tonnes of waste avoided (saving as much as 343 thousand cubic metres of landfill space, based on Australian retail

<sup>8</sup> Convery and McDonnell, 2003. Op cit.

<sup>9</sup> Ibid

<sup>10</sup> <http://www.mori.com/polls/2003/meb1.shtml>

<sup>11</sup> Based on an estimated consumption of 1 billion bags per year, with one in eight being LDPE and the rest HDPE (an assumption based on official Australian data). Also assuming approx 75% increase in sales of plastic bin-liners and kitchen-tidy bags (based on Convery and McDonnell). Higher industry claims of a 250% increase in such sales would reduce the net gain to 750million bags.

<sup>12</sup> Nolan-ITU Pty Ltd 2002. Plastic Shopping Bags - Analysis of Levies and Environmental Impacts, prepared for the Department of Environment and Heritage, Canberra.

<sup>13</sup> These figures are based on data provided by the Australian Bureau of Statistics and Nolan-ITU Pty Ltd (2002) Plastic shopping bags – Analysis of Levies and Environmental Impacts, prepared for the department of Environment and Heritage, Canberra.

sector estimates of landfill space saved by voluntary bag recycling<sup>i</sup>).<sup>14</sup>

A reduction of 800million bags consumed would be equivalent to 0.16% of estimated global consumption.<sup>15</sup> Clearly such an estimate can be no more than indicative of the benefits of a levy to wildlife, but if Scottish bags ended up in marine life directly in proportion to their consumption, and bags are responsible for deaths in proportion to their share in plastic litter, this reduction would result in 160 less marine mammal deaths and more than 1600 less bird deaths as a result of ingestion or entanglement.

#### **4. What are the likely effects of the proposed levy on businesses, including retailers?**

Retailers in Ireland are reported to have found the effects on their well-being from the carrier bag levy as either neutral or positive and implementation costs being modest and “generally less than the savings resulting from not having to purchase bags”.<sup>16</sup> Tesco Ireland have reported that: ““Customers are telling us they broadly welcome the introduction of the levy. We have seen a marked change in customers' behaviour in anticipation of the new levy, reflected in the significant increase in sales of our re-usable bags.”

The Chambers of Commerce in Ireland similarly welcomed the Plastic Bags Levy: “The organisation believes that by charging the consumer, it will discourage the inefficient and environmentally unfriendly use of these bags and supports earmarking of funds collected for environmental projects. Charging for every plastic bag that a consumer uses is an effective practice operated in a number of other European countries, including Denmark, and it makes the user think of more environmentally friendly ways to package their goods.”<sup>17</sup>

#### **6. What should funds generated by the levy be spent on? Should these funds be ring-fenced for this purpose? Should this be specified in more detail in the Bill?**

The funding should be ring-fenced for environmental projects aimed at tackling unsustainable resource use and waste generation, encouraging re-use and recycling with a strong focus on support for community based waste and resource use initiatives. FoES suggests that the same agency responsible for collection of the levy might also be responsible for its disbursement to environmental projects, perhaps with a criterion of proportionate to proceeds in each local authority, or proportionate to population.

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<sup>14</sup> Estimating landfill space requirements is complex, and depends primarily on the mixture of waste going to landfill, and how it is treated and compacted. At maximum compaction 800million bags would take up only 17,000m<sup>3</sup> (based on a 1990 US study by Franklin Associates), but in practical conditions a volume between 80,000m<sup>3</sup> (simply assuming that the average plastic bag in landfill were compressed to 1cm<sup>3</sup>) and the Australian estimate of 340,000m<sup>3</sup> would appear more realistic.

<sup>15</sup> InSourced.com

<sup>16</sup> Convery, F. and McDonnell, S. 2003. Op. Cit.

<sup>17</sup> Tom Clarke, President of Chambers of Commerce Ireland. <http://www.chambersireland.ie/index.asp?docID=382> Plastic Bags Levy welcomed – call for use pays principle to also be applied to water. 2003.

SUBMISSION FROM SSPCA

**Written evidence to the Environment and Rural Development Committee  
regarding the Environmental Levy on Plastic Bags (Scotland) Bill**

About the Scottish SPCA

The Scottish SPCA is Scotland's oldest and largest Animal Welfare Organisation. The Society's main objective is to prevent cruelty to animals and to promote kindness and humanity in their treatment.

The Scottish SPCA cares for over 13,000 abandoned, injured and abused animals every year in its 13 Animal Welfare Centres across the country. The Society's Inspectorate forms the frontline in the fight against cruelty. Aside from conducting investigations into suspected breaches of animal welfare legislation, Scottish SPCA Inspectors uplift and rescue injured and abandoned animals from Shetland to Stranraer.

The Scottish SPCA's three call centres process in excess of 90,000 telephone calls from members of the public reporting incidents relating to animals each year. In 2004 the number of telephone calls from members of the public reached 96,697 and Inspectors attended 31,248 incidents.

Animals and Litter

The Scottish SPCA has long campaigned to highlight the welfare problems posed to animals by litter. Discarded litter, particularly plastic materials, poses a grave threat to animals. The Society frequently receives cases where animals, particularly wildlife, become trapped in, or have ingested discarded litter and this can prove fatal. Particularly problematic are plastic and polythene bags, cans cartons, plastic can rings and discarded fishing line.

Plastic Bags

The Scottish SPCA receives a small number of telephone calls each year relating to animals suffering due to plastic bags. In 2004, nine calls relating to incidents of this nature were received to the Society's call centres, and so far in 2005, 12 calls have been received. Some examples included:

- "seagull stuck on very high roof for 16 hours plastic bag wrapped completely round its neck – very distressed" 02/07/04
- "gull with plastic bag round its beak. Now gull having difficulty swallowing" 21/07/04
- "Seal pup trapped in plastic bag on the beach " 29/01/05
- "Duckling caught up in plastic carrier bag in water. Pond is filthy and full of rubbish." 01/07/05
- "Very young kitten found last night with plastic bag round head" 04/08/05

The Scottish SPCA is aware that the incidents dealt with by its Inspectors in relation to wildlife and litter are only the tip of the iceberg in terms of the real number of incidents

that occur in Scotland annually. Wildlife that comes into the care of the Society has been seen and located by members of the public and reported to the Scottish SPCA. Often sick and injured wildlife will crawl away and die from suffocation, strangulation and starvation caused by litter being discarded unnecessarily. Therefore it is highly probable that there are greater numbers of wildlife that are killed or injured by plastic bags.

The Scottish SPCA is aware of anecdotal evidence that agricultural animals and horses can consume plastic materials, causing death. One such call was received last month:

- “Cow with plastic bag stuck in its mouth” (08/08/05)

#### Environmental Levy on Plastic Bags

While the numbers of animals that suffer annually due to discarded plastic bags is low in comparison to other forms of litter, the Scottish SPCA supports measures that will reduce the amount of litter being discarded across Scotland.

## SUBMISSION FROM THE MARINE CONSERVATION SOCIETY

### **Environmental Levy on Plastic Bags (Scotland) Bill**

Memorandum by the Marine Conservation Society to the Environment and Rural Development Committee for the Scottish Parliament

#### **Impacts of Plastic Bags in the Marine Environment.**

##### **1. Plastic degradation and dispersal**

Plastics are the most common man-made item sighted at sea, and many surveys, both in the UK and other countries report that plastics constitute the majority (>50%) of debris found on beaches. Plastics are resistant to biodegradation because no natural biological organisms exist which can break down plastic, so plastics are only broken down through weathering. Plastics at sea break down at a much slower rate than plastics exposed to weathering on land (Packforsk, 1989) mainly because temperatures at sea will be lower than on land thus slowing the degradation process. The rate of breakdown can be further reduced by chemical or biological fouling (Andrady, 2000) Estimates for plastic degradation at sea range from 450 to 1,000 years. Even when they do break down gradually through mechanical action, they break down into smaller and smaller pieces and ultimately into microscopic plastic pieces. Research has shown that plastic pieces ranging in size from 4mm to several centimetres in diameter, are regularly ingested by many seabirds such as fulmars and shearwaters (Van Franeker, 2005) and even microscopic pieces can be ingested by filter feeding marine animals (Thompson, 2004). Plastic can contain toxic compounds which are either adsorbed onto the plastic from surrounding seawater, or added to the plastic during production as plasticizers and other additives (Mato *et al*, 2001), and toxins accumulated by filter feeders are passed up the food chain to fish that prey on them and potentially to human consumers.

Because of their lightweight nature, plastic bags are readily carried by the wind. Indeed, they often blow out of litterbins and landfill sites, following even proper disposal. When they land in rivers or the sea, however, the surface tension of the water prevents them blowing any further. Wave action then expels air from the bag and eventually they become neutrally buoyant, and float in suspension before eventually breaking up into smaller fragments and deposited into sediments, entangling an animal, or being ingested.

##### **2. Numbers of plastic bags affecting the coastal and marine environment**

UK surveys have recorded a significant increase in plastic litter found on beaches from 1980 to 1991 (Dixon, 1995), and from 1994 to 2004 (MCS, 2005). Large numbers of plastic bags are found on UK beaches, reaching average densities of one bag every 26 metres (MCS 2005), and the potential threat they pose to wildlife makes them a hazardous form of litter.

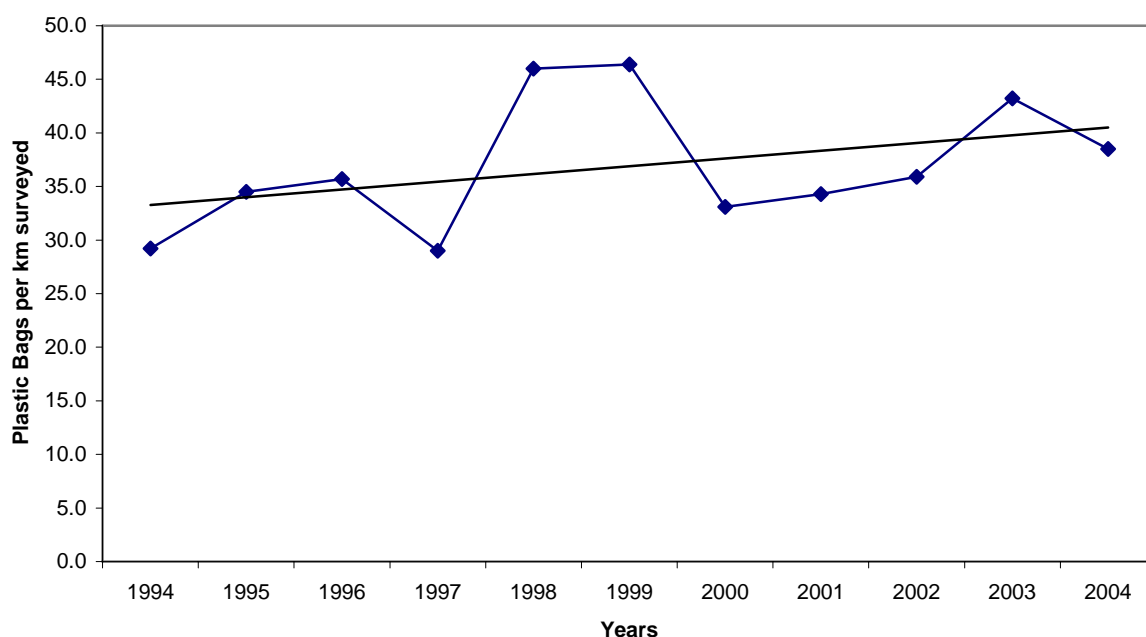
Beachwatch is a UK wide beach clean and survey that has taken place every September since 1993, organised by the Marine Conservation Society (MCS). During the Beachwatch 2004 event, 5,592 plastic bags were found on 269 beaches around the UK. On average 38.5 bags were found for every kilometre of coastline surveyed or an average of one bag for every 26m of beach surveyed. Plastic bags ranked number 13 in the top 20



most common litter items recorded, accounting for 2% of all beach litter. During the 2004 International Coastal Clean-up (ICC), which took place in 80 countries worldwide, 531,085 plastic bags were found, accounting for 7.5% of all litter found. In addition, the ICC reported that 2.2% of all animals found dead during the survey had been entangled in plastic bags (ICC, 2005). Over the period 1994 – 2004, MCS Beachwatch litter surveys have recorded averages of between 29 - 46 bags per km surveyed. Since 1994 the average density of plastic bags found during Beachwatch has increased by 31.8% from 29.2 items/km to 38.5 items/km.

In 1995, high numbers of plastic bags (more than 70% of total litter) were reported in dredge samples from the continental shelf along the French and Spanish Atlantic Coast (Galgani *et al*, 1995). During a survey of floating marine debris conducted in the South East Pacific plastic bags far outnumbered other items at 47.6% of all items (Thiel *et al*, 2003). Offshore surveys of floating marine debris in the North East Atlantic, carried out by the Hebridean Whale and Dolphin Trust from 2003 to 2005 found plastic bags to be the most common litter item seen at sea. In 2003, a total of 208 floating litter items were observed, 88 of these were plastic bags. In 2004, out of 209 items observed, 50 were plastic bags, and in 2005 out of 101 items observed, 34 were plastic bags. Plastic bags thus accounted for 42.3%, 23.9%, and 33.6% respectively of all floating litter observed in these surveys (HWDT, pers. comm.).

Denisty of plastic bags found during Beachwatch 1994-2004



### 3. Impacts of plastic bag ingestion

Plastic bags can be mistaken for food and consumed by a wide range of marine species. Ingestion of litter such as plastic bags can cause physical damage and mechanical blockage of the oesophagus and digestive system, resulting in a false sensation of fullness or satiation, as the litter may remain in the stomach. This can lead to internal infections, starvation and death (Laist, 1997).

Research into the stomach contents of dead fulmars from the Netherlands, between 1982 and 2001 found that 96% of the birds had plastic fragments in their stomachs with an average of 23 plastic pieces per bird (Van Franeker and Meijboom, 2003) Plastic bags are

a particular hazard to those species such as turtles and albatross that consume jellyfish or squid, as these prey species resemble plastic bags when floating in the water column. Plastic bags have been found in stomachs of the following marine species, several of which are classified as endangered\*:

- \*Green turtle (Uchida, 1990; Balazs 1985; Meylan 1978)
- \*Loggerhead turtle (Plotkin and Amos, 1990; Bjorndal and Bolten, 1994)
- \*Hawksbill turtle (Teas and Witzell, 1994; Hartog 1980)
- \*Leatherback turtle (Balazs, 1985; Sadove and Morreale, 1990)
- \*Black footed Albatross (Sileo et al 1990)
- Northern Fulmar (van Franeker, 1985, 2003, 2005)
- Herring Gull
- Great Black-backed Gull (Day *et al*, 1985)
- \*Harbour Porpoise (Walker and Coe, 1990)
- Common Dolphin
- Bottlenose Dolphin
- Risso's Dolphin
- Northern Right Whale (Walker and Coe, 1990)
- Pigmy Sperm Whale (Tarpley, 1990)
- Blackfin tuna (Manooch and Mason, 1983)

In April 2002 a dead Minke whale washed up on the Normandy coast. An investigation found its stomach contained 800 g of plastic bags and packaging including two English supermarket plastic bags (GECC, 2002).

Statement from Hebridean Whale and Dolphin Trust 07/06/04:

*"In February 2004 a dead Cuviers Beaked whale (Ziphius cavirostris) was found washed ashore on the west coast of the Isle of Mull, Scotland. Cuviers beaked whales are rarely seen in coastal waters as they are predominantly a deep water species. The Hebridean Whale and Dolphin Trust took various skin and blubber samples and removed the stomach for further study by the Scottish Agricultural College. On initial removal it was found that the entrance to the stomach was completely blocked with a cylinder of tightly packed shredded black plastic binliner bags and fishing twine. It is believed that this made it difficult for the animal to forage and feed effectively. This would have a biologically significant impact on the animal's ability to survive.*

*Full analysis of the stomach contents is currently being undertaken.*

*Cuviers Beaked whales usually prey on squid and catch their prey through the action of suction. It is believed that Cuviers Beaked whales mistake plastic bags in the water column for their prey species squid and ingest them. In previous years a number of Cuviers Beaked whales stranded in Scotland have been found to have plastic bags in their stomachs.*

*For any more details on this case please contact the Hebridean Whale and Dolphin Trust at 28 Main Street, Tobermory, Isle of Mull, Scotland, PA75 6NU. 01688 302620, email info@hwtdt.org"*

Marine turtles are not thought able to distinguish between synthetic materials and their natural prey. Turtles, particularly leatherback turtles, which are the most commonly seen turtles in UK waters are especially at risk from plastic bag ingestion, as these bags, particularly white or clear shopping bags closely resemble jellyfish - their primary prey – when suspended in the water column. Plastic bags along with sheeting and plastic pieces are the predominant synthetic items found in the stomachs of turtles. An autopsy of a dead leatherback turtle washed up in Scotland in December 1994 reported that it had died as a result of starvation, caused by primary obstruction of the digestive tract by ingested

plastic and metal litter. There was also a plastic bag lodged 40cm down the oesophagus (Godley *et al*, 1998). A leatherback, washed ashore in Galloway in December 1998, was found in very poor condition with approximately 57kg of plastic bags obstructing its alimentary tract (Bob Reid, pers comm.). The blockage included 1 white plastic bag, 1 black plastic bin liner, 3 transparent plastic bags, 1 green plastic bag, and 1 transparent plastic bag for chicken meat packaged by a US company. Another leatherback found dead on Harlech beach in Wales in September 1988 had a piece of plastic blocking the entrance to the small intestine, and an autopsy established this could have contributed to the animal's death (Eckert and Luginbuhl, 1988).

A study of dead stranded sea turtles on the coast of Brazil from 1997 to 1998 found the main items ingested were plastic bags. Of the 30 green turtles examined, white/transparent plastic bags were recorded in 14 (47%) of the green turtles found. Ingestion of anthropogenic debris accounted for the death of 4 (13.2%) of the green turtles examined (Bugoni *et al*, 2001). The sub lethal effects (such as difficulties in feeding following plastic bag ingestion, or increased energy needed for swimming following entanglement in a plastic bag, which can lead to a decreased ability to survive and/or reproduce) caused by plastic ingestion are difficult to estimate, but are probably more common than lethal effects (NRC, 1990).

#### **4. Impacts of plastic bag entanglement**

Plastic bags have been recorded as a cause of entanglement in marine animals. Entanglement can restrict movement, leading to starvation, drowning or suffocation. Once the entangled animal dies, their bodies decompose and the plastic item that caused their entanglement can trap other animals. Certain seabirds collect marine litter such as pieces of plastic bags for nest building, which could result in both adults and chicks becoming entangled. A study in 1991 found 97% of all gannet nests sampled in Newfoundland had plastics incorporated in them (Montevecchi, 1991). In the UK, a study of gannet nests on Grassholm Island in the Bristol Channel recorded that over 90% of the nests contained plastic. Plastic bags are known to cause entanglement in marine turtles, this is most likely due to the turtle mistaking the bag for food (Laist, 1997).

Plastic bags can kill coral by covering and suffocating the living polyps from which coral is made, or by blocking sunlight needed by the coral to survive. During 2001 so many plastic bags were regularly seen in the Gulf of Aqaba off the coast of Jordan, that the Board of Aqaba Special Economic Zone issued a law banning the production, distribution and trade of plastic bags within the areas under their jurisdiction (Saqr, 2001).

#### **5. Plastic toxicity**

There is little known about the transfer of toxic compounds from ingested plastic, however certain types of plastic are known to adsorb chemicals from their environment, resulting in concentrations much higher than their surroundings. Plastic surfaces can accumulate pollutants such as polychlorinated biphenyls (PCBs) and heavy metals at concentrations up to 1 million times higher than in ocean water (Moore *et al*, 2001). PCBs can lead to reproductive disorders, death, an increased risk of disease, and an alteration of hormone levels (Ryan *et al*, 1988; Lee *et al*, 2001). PCB exposure predisposes harbour porpoises in UK waters to infectious diseases and studies indicate that these substances can be transferred from mother to calf (Jepson *et al*, 1999). They have been linked to the masculinisation of female polar bears and spontaneous abortions and declines in seal populations. In 1988, Ryan *et al* obtained evidence that PCBs in the tissues of Great Shearwaters were derived from ingested plastic particles (from Derraik, 2002).

## **6. Threats to navigation and human life**

Fishermen report that plastics foul propellers and that plastic bags and sheeting clog seawater intakes and evaporators, causing engine failure, costly repairs, and delays. This type of vessel disablement can be life threatening. The RNLI reported that 1% of all deaths recorded from fishing vessels between 1992-2001 were caused by fouled propellers, and that nearly 300 calls to the RNLI were because of fouled propellers (RNLI, 2005).

## **7. Clean-up costs associated with plastic bags**

Estimates put the cost of cleaning the UK's beaches at £14.5 million a year (Environment Agency, 2004; KIMO, 2000). As plastic bags account for 2% of all beach litter found during Beachwatch surveys, an estimated cost of £ 290,000 can be applied to the cost of clearing plastic bags alone from the UK's beaches every year.

## **8. Points to consider regarding the plastic bag levy**

A point that MCS believes requires consideration by the Committee is to ensure that, as a result of any levy placed on plastic bags, mitigating measures taken by businesses do not result in a greater overall packaging and waste problem. Firstly, if it is the case that 80% of plastic bags are reused once, probably as bin-liners, before being disposed of, then people may potentially increase their use of 'proper' plastic bin liners to dispose of their rubbish, some of which may be less degradable than the retail bags. After the Irish bag tax was introduced, manufacturers found that sales of kitchen tidy bags rose by 77%, however this is not a significant increase in comparison to the reduction in plastic shopping bags, as the base level of kitchen bin bag sales was minor in comparison to plastic shopping bags. Larger garbage and garden bags have not shown an increase (DEH, 2002). MCS believes that it is important to incorporate in the Bill or within other measures, economic incentives for the sale and use of biodegradable bin liners to reduce impacts resulting from any concomitant increase in the use of bin liners as a result of a levy and reduction in use of retail shopping bags.

A further consequence that may arise from any levy may be for some manufacturers and retailers to sell their products ready-packaged in plastic, where previously they were sold loose. For example, some items of clothing are packaged unnecessarily in plastic sleeves and this practice may increase if the use of retail bags decreases. It is important to investigate whether retailers in Ireland have found ways around the need to provide plastic bags by introducing other means of packaging and whether these means have increased the use of plastic packaging for products which were previously unpackaged.

Finally, it is important to ensure that other forms of packaging do not simply replace the use of plastic shopping bags - replacing free plastic shopping bags with paper shopping bags is not a solution either, since more energy is needed to produce paper bags. The public should be encouraged to reuse bags, rather than replacing one form of disposable bag for another.

MCS does not make these points in any way to undermine the validity and importance of this Bill, simply to draw attention to the need to ensure that measures under other packaging regulations are stringent enough to ensure that the problem is not simply transferred to another part of the supply chain.

## **9. Beyond a plastic bag levy**

MCS would also recommend that the opportunity provided for by the Bill to address unnecessary waste production and disposal, should be maximised. We therefore suggest an extension of the levy to plastic bottles (and perhaps other packaging) be considered. Plastic bottles are a significant source of litter, at least on beaches, and are highly robust

and therefore very long lasting. When they do eventually break down, plastic bottles will be a major source of plastic fragments in the environment, which may then be consumed by wildlife and introduce significant quantities of toxic compounds into the food chain.

## **10. Conclusion**

**MCS supports the introduction of the Environmental Levy on Plastic Bags (Scotland) Bill on the grounds that plastic bags are an ubiquitous, easily and widely dispersed, long-lasting, unsightly and highly hazardous form of litter, posing a severe threat to marine animals many of which are already endangered or threatened by human exploitation or activities. A plastic bag levy, if implemented correctly, ensuring that other forms of packaging do not simply replace them, could contribute to a significant reduction in the quantities of plastic bags littering our landscapes, beaches and seas and help reduce one of the modern-day consumer's major impacts on marine wildlife.**

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## Environmental Levy on Plastic Bags (Scotland) Bill

Photographic evidence of the impact of plastic bags on marine wildlife

Submitted by the Marine Conservation Society to the Environment and Rural Development Committee for the Scottish Parliament



Stomach of Minke Whale washed up on Normandy coast in 2002, with plastic bags still inside

Photo: Gerard Mauger



A sample of the plastic bags found inside the stomach of a Leatherback turtle washed up in Scotland 1998.

Photo: Peter Richardson/MCS



Plastic bin liner found in stomach of Cuvier's Beaked Whale, Isle of Mull, 2004.

Photo: HWDT

SUBMISSION FROM WRAP

**Call for evidence on the  
Environmental Levy on Plastic Bags (Scotland) Bill**

**Introduction**

WRAP is grateful for the opportunity to provide written evidence to the Committee.

Plastic carrier bags are widely perceived to cause environmental problems. However, the available data suggest that these perceptions may be exaggerated. On the other hand, the growth in plastic bag use indicates that they have become deeply embedded in consumer expectation and behaviour.

WRAP (the Waste and Resources Action Programme) supports the use of economic instruments to modify behaviour and overcome market failures, but it is important that any such instruments be well designed. They should:

- have clear objectives;
- be capable of achieving those objectives; and
- not have damaging or unintended consequences.

WRAP is concerned that the Environmental Levy on Plastic Bags (Scotland) Bill may not achieve its stated objectives, and may also have unintended consequences.

**About WRAP**

WRAP (the Waste and Resources Action Programme) is a not-for-profit company working across the UK, and funded by the Scottish Executive, Defra and the devolved administrations in Wales and Northern Ireland. We are a delivery body whose mission is to accelerate resource efficiency, by creating stable and efficient markets for recycled materials and products, and removing barriers to waste minimisation, re-use and recycling. WRAP runs 12 separate programmes including those concerned with plastic and paper, and with waste minimisation. The Bill is therefore of considerable interest to WRAP.

**Objectives of the Bill**

As we understand it, the proposals in the Bill have the following objectives:

- A reduction in the waste of useful materials;
- A reduction in litter;
- Improved safety for wildlife; and
- Support for local environmental projects through the redistribution of the net levy proceeds, after deducting administration costs.

**Reduction of Waste**

The levy is proposed to apply to plastic carrier bags only, because of their persistence in the environment, especially as litter.

Scotland's consumption of plastic carrier bags is estimated at 690 to 860 million bags (5,800-7,200 tonnes) per annum<sup>1</sup>. In the UK as a whole, they represent 3.5%-5.3% of total packaging plastics<sup>2</sup>. Although it is to be hoped that many consumers will respond to any levy by starting to use reusable bags, not all will. For the rest, the most likely alternative to plastic carriers will be paper bags. These are heavier, often weaker and intrinsically less reusable. Assuming that many consumers will continue to expect to be provided (for free) with something in which to carry their purchases away, a substitution of paper for plastic is likely to lead to a greater weight of waste materials for disposal.

Paper does biodegrade, and would be preferable to plastic in the environment from a litter perspective. However, adding it to the municipal waste stream will make it harder to meet the UK's legally binding targets under the EU Landfill Directive for reducing the amount of biodegradable waste sent to landfill. The use of heavier paper bags may also have other environmental implications, including higher transport costs and emissions.

There is some evidence that plastic carrier bags have secondary uses in the home. In particular, they are used to line kitchen and other waste bins. Experience in Ireland was that introduction of the levy was followed by a significant rise in sales of pedal bin liners and black refuse sacks. It is questionable therefore whether the net reduction in plastic waste would be as large as has been predicted in some quarters. For these reasons WRAP believes it would be sensible for there to be a life cycle analysis and a cost benefit analysis before implementing any levy.

In our view, it would also be sensible to investigate the option of applying the levy to *all* disposable carriers (not just plastic bags), since the shift in consumer behaviour sought is to substitute multiple use bags for disposable carriers, regardless of what material they are made from. The Scottish Executive's Extended Impact Assessment<sup>3</sup> estimates that the Bill, as drafted, would lead to an *increase* in waste generation of 5,409 tonnes. If the Bill were extended to cover paper bags as well as plastic, they estimate that waste generation would *reduce* by 4,993 tonnes. Thus, the extension of the levy from plastic to all disposable carriers would achieve (modest) waste reductions, in a way that the current Bill seems unlikely to do.

Some stakeholders have suggested that a levy could be justified purely on the basis that it would raise awareness of waste and littering issues amongst the general public. WRAP would support this educational objective, but we do not think that it is a sufficiently strong reason to justify a levy.

International experience is also relevant here. The Australian Government considered introducing a levy on plastic bags in 2002<sup>4</sup>. A two-year deferral was agreed until the end of 2004, to see if voluntary reuse and charging schemes would be successful. A report for the Australian Environment Ministry in March 2005

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<sup>1</sup> AEA Technology (2005), 'Proposed Plastic Bag Levy – Extended Impact Assessment', report for the Scottish Executive, available at [www.scotland.gov.uk/publications](http://www.scotland.gov.uk/publications).

<sup>2</sup> WRAP estimate.

<sup>3</sup> AEA Technology (2005), 'Proposed Plastic Bag Levy – Extended Impact Assessment', report for the Scottish Executive, available at [www.scotland.gov.uk/publications](http://www.scotland.gov.uk/publications).

<sup>4</sup> Data in this paragraph taken from volume 2 of reference 2.

indicated that bag usage fell by 20.4% between 2002 and 2004 through the voluntary code of conduct agreed by Australian retailers. Thus, it appears that voluntary measures can lead to real reductions in waste if effectively implemented.

### **Litter**

Carrier bags in the environment are visually intrusive and persistent. However, evidence from ENCAMS in relation to England<sup>5</sup> shows that the major components of litter are smoking products, confectionery and drinks containers. A Defra study, again in England, found that only 15% of litter of any kind was plastic. This suggests that a reduction in plastic bags would make only a marginal improvement to the overall litter situation.

It is important to recognise that the majority of users of plastic carriers do not throw them away as litter, but dispose of them at home. Efforts to reduce litter may be more effectively focused on those situations where litter does arise naturally, e.g. from fast food outlets. The October 2003 consultation paper by Defra on a voluntary Code of Practice for the Fast Food Industry<sup>6</sup> is clearly a helpful step in this direction.

### **Wildlife**

As reported in the Scottish Executive's Extended Impact Assessment (EIA) on the Bill, the Marine Conservation Society's 2004 Beachwatch report<sup>7</sup> found that plastic bags accounted for just over 2% of all litter found on the beaches surveyed. They were the 13<sup>th</sup> most common type of beach litter recorded. As this EIA also notes, the Scottish Society for the Prevention of Cruelty to Animals received nine calls during 2004 relating to animals trapped in plastic bags, a total of 0.01% of all their calls. Both of these statistics suggest that even a total removal of all plastic carrier bags from circulation in Scotland is unlikely to make a significant impact, either on beach litter or on wildlife protection. It is at least arguable that, if these issues are seen as priorities, they could be addressed much more effectively by spending the administration costs of the levy in other ways.

### **Use of levy proceeds**

The Scottish Executive's Extended Impact Assessment of the Bill<sup>8</sup> estimated that, as currently designed, the levy will cost Scottish local authorities £3-4 million to set up and a further £3.5 million annually in administration costs. Annual revenue from the levy is estimated at £7.75 million. This means that, even ignoring set up costs, ongoing administration costs will absorb 45% of the levy proceeds, with only 55% available to spend on local environmental projects. This does not seem to represent an efficient levy design.

In addition, section 2(2)(e) of the Bill requires that stronger reusable bags will only be exempt from the levy if they are sold to the customer at a cost at least five times that of the levy – i.e. for at least 50 pence. Many supermarkets currently make such bags

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<sup>5</sup> ENCAMS (2003) *The Annual Local Environmental Quality Survey of England 2002/03*, Wigan: Environmental Campaigns Ltd.

<sup>6</sup> Available at: [www.defra.gov.uk/corporate/consult/foodlitter](http://www.defra.gov.uk/corporate/consult/foodlitter) .

<sup>7</sup> Marine Conservation Society (2004) *Beachwatch Report 2004*, available at: [www.adoptabeach.org.uk/News/beachwatch04.htm](http://www.adoptabeach.org.uk/News/beachwatch04.htm) .

<sup>8</sup> AEA Technology (2005), 'Proposed Plastic Bag Levy – Extended Impact Assessment', report for the Scottish Executive, available at [www.scotland.gov.uk/publications](http://www.scotland.gov.uk/publications) .

available for around 10 pence. It therefore seems unfortunate that a Bill whose intention is to cut plastic bag waste will make it significantly more expensive for consumers to purchase the most widely available alternative type of bag.

### **Supermarket and packaging waste**

We recognise that the public are concerned about the levels of waste (particularly packaging waste) that are associated with supermarket purchases. WRAP has therefore set up a Retailer Initiative to engage constructively with leading retailers to identify collaborative projects that aim to reduce food and packaging waste. This work is supported by WRAP's Innovation Fund, which will procure research and development projects on the design, prototyping and piloting of innovative products, packaging, materials and systems. The aim of these programmes is to reduce household waste by 310,000 tonnes by March 2006.

### **Plastics recycling and biodegradable bags**

Many supermarkets now have, or are developing, good plastic film recycling capabilities (for back of store waste in the first instance), and post-consumer plastic bags are increasingly being recycled through this route. Fewer bags therefore end up in landfill.

Some have suggested that biodegradable plastic bags are the answer to litter concerns. However, biodegradable bags have not been demonstrated to be compatible with the general recycling stream. Many biodegradable materials do not yet have proven environmental credentials. Whilst they may be crop-derived, the use of pesticides, fertilisers and fuel to grow and harvest these crops represents a significant environmental resource, lost when the bag degrades. Good life-cycle analyses will be required before these materials could be recommended as substitutes for plastic.

As well as reusing and recycling plastic bags, there are also more innovative projects being pursued by industry. For example, Innovene (a wholly owned subsidiary of BP) is researching into the possibility of recycling waste plastics into new petrochemicals as an alternative to using virgin fossil-based raw materials for a portion of its production. If the research is successful, Innovene intend to build their first plant in Scotland.

### **Unintended Consequences**

We have already referred to the evidence from the Irish experience that a levy on plastic carrier bags has led to substitution from plastic to paper bags, and an increase in sales of plastic refuse sacks.

In addition, another potentially negative consequence of an intervention of this sort, if it does not achieve its stated objectives, would be public disillusionment with future attempts to modify behaviour in favour of the environment.

### **Alternative ways forward**

We believe that it might be possible to make a stronger case for a levy on carrier bags if:

- it applied equally to all carrier bags, whatever material they were made from;

- it were introduced as part of a suite of levies on all the main components of litter;
- it was presented primarily as a measure to reduce litter; and
- the revenue raised was recycled *fully* into anti-littering & street cleansing operations.

However, there are alternative ways in which the policy objectives of the Bill might perhaps be addressed. Whilst we recognise that voluntary retailer initiatives have not yet made a major impact on carrier bag usage in the UK, we do believe that much more could be done in this area. For example, in Australia, a concerted campaign by retailers and Government was successful in reducing consumer use of bags by 26% in 6 months.

WRAP is working with retailers to try to cut resource use and waste production throughout the retail sector. One of the possibilities that we are currently testing with retailers is the idea of a campaign to promote the re-use of carrier bags, based around the Australian experience. The campaign is being trialled in Edinburgh and Bristol, and combines local information provision through the media with in-store encouragement of carrier bag re-use. Consumers will be encouraged to “Choose to Re-use” any carrier bag, and in particular, durable alternatives to the free bags given away in store. The trial is being conducted in partnership with the Scottish and British Retail Consortia, the Scottish Waste Awareness Group, Tesco, ASDA, Scotmid, the Co-operative Group, Boots, Somerfield, Waitrose (in England) and Dobbies. It is being funded by the Scottish Executive, Welsh Assembly Government, Defra and the retailers. WRAP will monitor use & re-use of bags before, during, and after the trial, and also consumer attitudes to bags and their re-use.

A number of regional pilot programmes using this approach have seen a significant reduction in the distribution and use of free plastic carriers bags and an equally significant increase in the use of ‘bags for life’ by consumers – be they plastic or textile based.

For example, a pilot programme run by Durham County Council<sup>9</sup> in August 2003 illustrated the efficacy of this voluntary ‘bag for life’ approach. The retailers involved (Sainsbury, Tesco and Marks and Spencer) were pleased with the outcome, with sales of ‘bags for life’ increasing by 500% at Sainsbury and 80% at Tesco. Marks and Spencer introduced a woven fabric ‘bag for life’ at its Durham stores and found the pilot so useful that it now offers this alternative to shoppers at all of its food stores throughout the UK. The pilot achieved good consumer acceptability and helped the local authority to meet its environmental objectives.

Technology may also offer part of the solution to reducing carrier bag waste. WRAP and ASDA are funding a trial of automatic carrier bag dispensers this autumn. The dispensers deliver bags to consumers at regular time intervals, thereby reducing the opportunity for consumers to take more bags than are really necessary. The technology is already in use in stores in Israel, where they have reduced carrier bag

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<sup>9</sup> See Durham County Council’s 5 November 2003 press release at: [www.durham.gov.uk/durhamcc/pressrel.nsf/Web+Releases/C37245EE2E4FFD4D80256DD5005D1A4C?OpenDocument](http://www.durham.gov.uk/durhamcc/pressrel.nsf/Web+Releases/C37245EE2E4FFD4D80256DD5005D1A4C?OpenDocument) for more details of the scheme.

usage by between 30 and 50%. The trial will begin in Autumn 2005 and will be complete by Spring 2006.

### **Summary**

On the available evidence, WRAP is not convinced that the plastic bag levy, as proposed in the Bill, would produce a net environment benefit or a noticeable improvement in the overall waste or litter situation. It also appears to have very high administration costs.

There are a number of non-regulatory alternatives to the levy that might fulfil the same objectives, and we would suggest that they be considered carefully.

We suggest that before any levy is introduced there should be both life cycle and cost benefit analyses of this proposal, and the main alternatives, such as extending the levy to cover all types of disposable bags, not just plastic ones.

## SUBMISSION FROM SEPA

### **Environmental Levy On Plastic Bags (Scotland) Bill**

#### **1. Introduction**

- 1.1. This paper is SEPA's submission to the Environment and Rural Development Committee on the Environmental Plastic Bags (Scotland) Bill. The submission assesses the available work carried out around the world on the environmental impacts of plastic versus paper carrier bags, and looks at other potential impacts such as social, cultural and economic effects.

#### **2. Cultural Impacts.**

- 2.1. One of the ambitions behind the National Waste Strategy is to move away from the current culture of use and dispose to a more sustainable reduce, reuse, recycle culture. Disposable shopping bags of all types are a high profile example of the use and dispose culture and any measures that are effective in moving the public away from this attitude are to be welcomed. Indeed this is a stated aim of the proposed levy.
- 2.2. It has clearly been demonstrated in Ireland that a levy can change consumer behaviour. Evidence from Ireland suggests that a levy would have a significant effect in reducing disposable plastic bags. The initial decrease in their use was 90% and this has now risen to 95%<sup>1</sup>. If this is accompanied an increase in the use of multi-trip bags then it is a significant start in moving consumers to more sustainable behaviour.

#### **3. Litter**

- 3.1. One area of particular concern to the public is that of litter from disposable plastic bags. The loss of plastic bags to the environment results in a visual impact, risk to wildlife and has a consequential economic cost in litter management. Litter in general terms also has a potential impact on the value of Scotland as a tourist destination and as a destination for inward investment.
- 3.2. This may not necessarily be because a higher percentage of plastic bags escape, but is due to their persistence in the environment and the higher proportion of plastic over paper carrier bags. A report for Environment Australia<sup>2</sup> estimated plastic bags have a lifespan in the environment of 5 years, particularly in the sea, while the Forth Estuary Forum<sup>3</sup> estimates between 10 and 20 years. Irrespective of the difference it does emphasise the persistence of plastics in the environment and why there is a particular problem with this type of waste.
- 3.3. Apart from the visual impact which is of greatest concern to many people, when they escape into the sea the bags can do the most damage by suffocating marine animals that consume the bags due to their similarity to jellyfish. Forth Estuary Forum surveys<sup>4</sup> have found the main source of litter on foreshores are from land based sources. The Marine Conservation Society Annual Beach Litter Report 2003<sup>5</sup>, found that plastic bags made up 2.1% of the beach litter cleared



during their annual survey. Plastic items as a whole made up 7 of the top 10 items of litter. Plastic bags came 13<sup>th</sup> on the list. The figure for plastics bags is low but given the persistence of plastics and the risks to wildlife any measure that reduced it further would be welcome.

- 3.4. Evidence from Ireland where the Plastic Bag Tax was introduced in 2002, primarily as an anti litter campaign, suggests that the litter problem has reduced significantly. A report for the Department of the Environment, Heritage and Local Government states that the percentage of litter from plastic bags fell from 5% to 0.25% in 2004<sup>1</sup>.
- 3.5. The Scottish Executives Extended Impact Assessment<sup>6</sup> of the proposed levy states “although under all levy scenarios there would be a resulting decrease in litter, the fact that plastic bags account for less than 1% of land litter suggests that this would have a minor impact on the overall litter problem in Scotland. The same argument holds for any reduction in the amount of plastic carrier bag waste going to landfill”. But irrespective of the actual contribution of plastic carrier bags to the litter problem in Scotland the levy is likely to result in a consequential reduction in the scale of this problem,
- 3.6. No data was given for any potential benefits from the reduction of marine litter but if it is assumed that the majority of the bags that enter the seas are blown or washed in from land litter then a similar conclusion could be reached.
- 3.7. However it must be noted that the introduction of a levy is only one way of addressing the litter problem, which is primarily a behavioural issue.

#### **4. Environmental Impacts**

- 4.1. The risk of a levy promoting a switch to other types of disposable bags has to be taken into account and the potential environmental impacts assessed. This was recognised in the Extended Impact Assessment carried out for the Scottish Executive where it was assumed there would be a 25% switch to paper bags.
- 4.2. A number of studies on the environmental impacts associated with the manufacturing and transport of plastic bags have been carried out around the world. Unfortunately for the current purposes none of the studies have been carried out in the United Kingdom, and only one is recent (2004). All of the studies used life cycle assessment to assess the impacts of various types of carrier bags including non-biodegradable and biodegradable plastic bags and paper bags.
- 4.3. The most recent study was carried out in France for Carrefour<sup>7</sup>, one of the worlds largest retail groups. The study looked at four types of bag, disposable thin plastic bags, reusable thick plastic bags, disposable paper bags, and disposable biodegradable plastic bags.
- 4.4. Seven standard environmental indicators were used, energy consumption, water consumption, global warming potential, air acidification, photochemical oxidants emission, eutrophication and solid waste production. In addition an eighth indicator was developed for this study, the ‘risk of loss’ of the bag in the environment where it has the potential to become a visual impact and a potential hazard to wildlife.
- 4.5. The conclusion of the Carrefour study was that if used more than four times the reusable thick plastic bag was better for all indicators than all other bag types.

The disposable plastic bag was better than paper or biodegradable bags, but its main weakness was the high risk of loss to the environment.

- 4.6. A similar conclusion has been reached by a number of other studies. A report for Environment Australia<sup>2</sup> which looked at a larger range of bag types but fewer indicators, found that reusable woven HDPE bags had less environmental impacts than all other bag types, Table 1.
- 4.7. As with the Carrefour study the paper bag had significantly higher environmental impacts than all of the plastic alternatives other than the Boutique LDPE. The latter is intended as a single use bag designed to carry clothes or general retail items and is not normally obtained from supermarkets.
- 4.8. Table 1 also includes data for litter. However this is purely a measure of the material that has escaped into the environment. The Carrefour 'risk of loss' indicator attempts to take into account not only the quantity escaping into the environment, but also persistence in the environment, which is generally perceived as the real problem with plastic bags.
- 4.9. Franklin Associates Ltd<sup>8</sup> compared polyethylene and unbleached paper sacks in the USA. In common with the reports referred to above they found plastic bags showing less energy use, less emissions, and less solid waste.
- 4.10. The Franklin study also looked at the effect of the recycling rate on bag preference. The conclusion is that "using energy and pollutants from all stages of a bags life cycle, both measures result in favour of plastic bags".

Table 1. Summary of Results from the Plastic Shopping Bags – Analysis of Levies and Environmental Impacts Streamlined LCA.

Alternative	Material Consumption (kg) <sup>†</sup>	Litter (g)	Litter (m <sup>2</sup> )	Litter (m <sup>2</sup> /yr)	Green-house (CO <sup>2</sup> equiv.)	Primary Energy Use (MJ)
Singlet HDPE*	3.12	15.6	0.144	0.72	6.08	210
50% Recycled Singlet HDPE	3.12	15.6	0.144	0.72	4.79	117
Boutique LDPE (single use)	11.77	58.8	0.195	0.975	29.8	957
Reusable LDPE**	0.96	4.8	0.121	0.0603	2.43	78
Calico	1.14	5.7	0.0041	0.0819	2.52	160
Woven HDPE swag	0.22	1.1	0.00148	0.00743	0.628	18.6
Woven HDPE (smaller capacity)	0.421	2.0	0.00187	0.00934	1.21	35.7
PP Fibre 'Green Bag'	0.48	2.4	0.00187	0.00934	1.96	46.3
Kraft Paper – Handled	22.15	111	0.156	0.078	11.8	721
Solid PP 'Smart Box'	0.42	NA	NA	NA	1.1	38.8
Biodegradable – Starch Based	6.5	32.5	0.156	0.078	6.61	61.3

\*Singlet HDPE – single use high density polyethylene.

\*\*Reusable LDPE – Reusable low density polyethylene (bag for life type carrier bag)

\*\*\*Calico – cotton carrier bag

\*\*\*\*Woven HDPE Sag – large shopping bag made from woven fibres of high density polyethylene

<sup>†</sup>Material consumption was calculated assuming 52 shopping trips per year 10 average plastic shopping bag loads each trip

The Environment Australia report (Table1) chose to represent litter by three indicators. These are:

- Mass of material finding its way into the litter stream – representing mass of resources lost from recovery options;
- The area of ground covered by litter – measure in metres squared (m<sup>2</sup>) and based on the maximum area which a bag could cover if lost to the litter stream; and
- The persistence of litter measured in metres squared per annum (m<sup>2</sup>/yr) to represent the area covered by litter over time.

To model this last indicator an estimate of an average time a piece of litter may remain in the litter stream was needed. The data used for different materials was as follows:

- Plastics (both single use and multiple use but not biodegradable polymers) -5 years.
- Paper and biodegradable polymers – 6 months.
- Calico bags – 2 years.

4.11. One aspect of disposable plastic bags which is difficult to quantify, and is therefore often not covered in life cycle studies, is their reuse. Many disposable plastic bags are subject to a number of secondary uses, the most common being as bin liners<sup>9</sup>. It is interesting that when the Irish plastic Bag Tax was introduced the fall in use of disposable plastic bags was accompanied by a rise in the use of bin liners. Even though secondary use of disposable plastic bags cannot be quantified, it needs to be taken into account.

4.12. Whichever type of bag is used the environmental impacts associated with manufacture and distribution of shopping bags are small compared to the total environmental impacts from all sectors across Scotland. However any measure which would reduce global warming impacts is to be encouraged. The use of plastic bags, particularly multiuse plastic bags show significant benefits in relation to global warming emissions when compared to paper bags and in the case of multi use bags is also likely to have a beneficial effect on the impacts of plastic bags escaping into the environment as litter.

4.13. One of the primary reasons for the reduced environmental impacts associated with the transport and manufacture of plastic bags is the much lower weight of bag required to carry a given amount of shopping. An illustration of this is given by Michigan Technical University<sup>10</sup> where the weight of 1000 paper bags is given as 63.5 kg as opposed to a little over 7kg for plastic bags. If, as stated in the Scottish Executive Environment Group Research Report<sup>5</sup>, Proposed Plastic Bag Levy – Extended Impact Assessment the use of paper bags will increase by 174 million to 213 million a year, it will come with associated increases in energy use, transport, storage space and waste disposal. Whilst we accept the recyclability of paper bags this is highly dependent on high levels of public participation and material capture. We therefore believe that a substantial proportion of paper bags could still end up in landfill.

## 5. Social Effects

5.1. When the Area Waste Plans were being developed in Scotland, job creation was one of the criteria used in the decision making process. In the case of the plastic bag levy it is likely that jobs will be lost. It is estimated that 300 to 700 jobs could be lost as a direct result of the levy with knock on effects on 14,500 jobs in associated industries across the UK<sup>5</sup>.

5.2. There is also the objection raised in some areas that the levy would impact most on the least well off. This may be true but the estimated costs are not high, £7.41 to £10.58 per year as the bill now stands<sup>5</sup>. Much will depend on whether or not retailers currently pass on the hidden costs of disposable bags to the customer or not. A shift by consumers away from one trip carrier bags by the use of multi-trip bags would have a substantially lower cost. This is a choice the consumer

can make themselves. Furthermore, according to the Scottish Executive's Extended Impact Assessment<sup>5</sup> the hidden costs of lightweight plastic carrier bags is £7.51 per 1000 bags. Compared to this they quote the hidden costs of paper carrier bags as £169.69 per 1000 bags. If the effect of the levy was simply a switch to paper carrier bags then the increased hidden costs may continue to be passed on to the consumer.

- 5.3. While the estimated costs are insignificant in comparison to the average household consumer spend of £365 a week, there is no doubt that as with all flat rate taxes, the poorest will be hit hardest. However if the levy is successful in promoting the use of multiple use bags any impact would be minimised.

## 6. Conclusions

- 6.1. There seems to be little doubt that when accounting for quantitative environmental impacts associated with the manufacture and transport of plastic bags, both reusable and disposable, are a better option than paper bags and that a levy solely on plastic bags could be detrimental to the environment due to the higher environmental impacts associated with any potential shift to paper bags.
- 6.2. On the basis of the above factors the levy does not seem to be an attractive proposition. Particularly in light of the Bills proposed intent that "it aims to alter people's behaviour to help protect the environment"<sup>11</sup>
- 6.3. However a levy would be a very high profile way of starting a culture change away from the use and dispose culture to a more sustainable reduce, reuse, recycle culture. Furthermore, based on the Irish experience, SEPA supports the argument that it would contribute to a reduction in land based litter with consequential benefits in visual amenity, marine health and the economic costs of litter management, be it on land or sea.
- 6.4. If the levy as proposed resulted in a shift towards the use of multi-trip shopping bags it would be a significant step forward in changing consumer behaviour. However as it stands, a levy only on plastic bags risks a significant shift to the use of one trip paper carrier bags with substantial additional impacts on the environment from manufacturing and transport. The extent to which a switch to paper bags would occur is contentious. In the Republic of Ireland some retail sectors have switched to paper bags.
- 6.5. SEPA would support the levy if it was extended to cover all single trip shopping carrier bags. This would achieve overall reductions in emissions to the environment, would reduce the litter impact and would help achieve the objectives of changing consumer culture. In the Scottish Executives Extended Impact Assessment a switch of 25% has been assumed, and the models that included a levy on paper as well as plastic disposable bags showed environmental benefits, associated with the manufacture and transport of the bags, over those that did not include paper bags in the levy.
- 6.6. Any decisions on levies of this type must address whether or not they will promote sustainable development. Are the environmental benefits such that any loss of jobs or economic growth can be justified? It may be questionable whether the small benefits of the plastic bag levy at it stands can justify the potential job losses, if the levy is only looked at in terms of the short term environmental benefits. But if a longer term view is taken and the potential benefits to reducing the use and throw away culture is taken into account, and with that the potential

environmental benefits of this change, then it can be justified provided a transitional approach was taken by government to support industry in making such changes. SEPA would support a longer term strategy to gradually reduce the use of all non reusable products where reusable alternatives are available and where industry were given sufficient time to adjust to new production opportunities.

- 6.7. Litter is primarily a behavioural problem and a levy on disposable bags is only one way of addressing it. Education and awareness are of equal importance. Provided the levy can address the potential risk of a shift to the use of paper bags and is accompanied by a high profile publicity campaign on the need to reduce waste, and in particular disposable goods in general, then it could provide a powerful kick start to a change towards a more sustainable consumer culture. This would be in line with the Scottish Executives investment in other sustainability issues such as home composting and refurbishment projects. It may also enable a move to place levies on other one trip disposable products, such as razors and cigarette lighters, where reusable alternatives exist.

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SUBMISSION FROM CRNS

**Environmental Levy on Plastic Bags (Scotland) Bill**

**Summary of response**

The Community Recycling Network for Scotland (CRNS) fully supports any legislation which aims to reduce environmental degradation, preserve natural resources and increase environmental stewardship. The CRNS believes that a Bill to introduce a tax on plastic bags will have a positive influence on raising awareness of waste and litter issues resulting in increased environmental stewardship amongst the general public. A tax will also provide a stimulation within the retail sector to design and implement more sustainable mechanisms for packaging goods.

**The CRNS and the community sector**

The CRNS is a membership organisation set up to provide support, representation and information for community led groups involved in recycling, reuse, composting, reduction and waste education activities, across Scotland. The CRNS has 81 full and associate members, ranging from large scale social enterprises involved in direct material collections to small voluntary based community initiatives involved in local waste awareness activities. The CRNS believes that a sustainable future involves the use of waste as a valuable resource which in turn will bring significant social, economic and environmental benefit to Scotland's communities.

**RESPONSE TO CONSULTATION**

General

The CRNS fully supports the use of legislation, regulation and fiscal instruments to ensure greater environmental protection. It also believes that the protection of the environment should be linked to a more holistic stewardship of the social and economic structure of our communities and this should be reflected in the development of a new sustainable resource use management paradigm described as Zero Waste which seeks to eradicate waste and the concept of waste from society. Zero Waste is not about waste at all but about the management of resources to benefit the current environmental, social and the economic structure of communities without compromising their future needs and aspirations.

The CRNS supports the use of producer responsibility measures to curtail the production of waste in the first instance and to make manufacturers, producers and retailers responsible for any waste when produced. Such responsibility should encompass the arrangement and payment of recycling and reuse activities to ensure products and packaging do not become waste and that they

are recycled or reused back into production of either the same product or an entirely new product which itself is fully recyclable or reusable.

The CRNS also supports that there needs to be more awareness raising of the impact of waste within the general public who can make specific choices which could either increase or decrease the amount of waste they produce. The “Plastic Bag Levy” as proposed, the CRNS believes, will both act as a direct awareness raising activity as well as a barrier to continuing waste production.

The CRNS would have preferred, however, that the introduction of a Plastic Bag Levy was part of a much wider Producer Responsibility Programme developed by the Scottish Parliament which would have set out a clear strategy for the minimisation of certain products and materials and the total recycling and reuse of others.

Having said this the CRNS does support the levy as it will allow for the establishment of a efficient local collection programme which could then be extended to cover other products and packaging such as drinks bottles (glass and plastics), batteries, paint tins, mattresses etc which would then allow for greater support (funding) for specific collection and awareness programmes.

#### Litter

A number of our members are also involved in wider environmental stewardship projects other than simply recycling and reuse. Many of them are involved in litter collection and beach clean up programmes particularly in the north of Scotland and Island communities. In these cases the issue of plastic bags as litter is of particular concern both from an aesthetic perspective but also from one of wildlife protection. CRNS members have indicated that legislation which would limit the littering of plastic bags should be supported although other litter such as plastic bottles and packaging film have similar effects on the environment and need to be addressed also.

#### Local Environmental Benefit

The CRNS also supports the hypothecation of environmental levies towards environmental protection programmes. It is also acceptable to the CRNS that the Plastic Bag Levy is a locally collected levy and the proceeds spend locally. The CRNS would propose that the monies raised from the levy were committed to projects specifically aimed at reducing further the impact of waste and litter on the local environment rather than wider, more general environmental improvement work. It would be our contention that local community groups should benefit from this funding to design, implement and support on-going waste prevention and education activities consistent with the objectives of the forthcoming National Waste Prevention Action Plan. Such local activities if they were suitably encouraged would allow for further environmental gains to be made as well as increased local economic and social benefit through potential employment and social inclusion. The CRNS would contend that a more holistic



approach to the implementation of a plastic bag levy, as currently proposed in the Bill, which includes the establishment of local community based waste prevention and education programmes would ensure that the net environmental gain of the levy was greater than that described in the report prepared by the Scottish Executive. The CRNS would ask that to ensure that these additional, or indirect (but potentially substantive) environmental gains are achieved the Bill as proposed is amended, or added, to so as there is clear direction on the scope and criteria for the commitment of monies raised through the levy.

### Green Jobs Strategy

Whilst the CRNS accepts that a reduction in the use of plastic bags could lead to the re-deployment of manufacturing capacity in certain areas of the plastic film industry both in Scotland and elsewhere in the UK, there should be recognition that the intended shift from a waste management culture dependent on disposal to one of intensive recycling and reuse will involve significant changes in employment strategies both directly involved in the management of waste (as resources) and elsewhere in the supply chain. The CRNS would therefore like to see a more strategic focus being adopted in the Scottish Executive's Green Jobs Strategy, within the section on recycling, which would assist local, regional and national employment agencies in the identification of more of the opportunities for increased employment within the emerging sectors of sustainable product manufacturer and sustainable service delivery.

In addition as detailed above, an appropriate use of the tax, once collected, for the support of local community programmes will lead to increased employment and social inclusion opportunities.

### Other Issues

CRNS members involved in collections particularly kerbside sorting collections have indicated that the use of plastic bags by households to present their materials for collection can be problematical as in general the bags become a 'contaminant' which is either left at the kerbside or collected and treated as 'waste' by the collector as the amounts and limited access to market for plastic bags limits the recyclability of the material. Bags presented in such collections tend to be damaged in the process of decanting materials and so if they are left at the kerbside they are not reusable and will therefore end up as waste. If paper bags were substituted then one effect would be that the paper bag could be added to the paper (or card) collection and so increase the value of the overall recycling activity.

## SUBMISSION FROM WASTE AWARE SCOTLAND

### **Evidence to the Environment Committee on Environmental Levy on Plastic Bags (Scotland) Bill**

#### **Introduction**

The Scottish Waste Awareness Group (SWAG) welcomes the opportunity to contribute to the call for evidence by the Environment and Rural Development Committee on the Environmental Levy on Plastic Bags (Scotland) Bill.

Since 2001, SWAG has been directly involved in changing public attitudes and behaviour to domestic waste. SWAG designed the Waste Aware Scotland programme, promoting Reduce, Reuse and Recycle across the whole of Scotland. This programme is closely linked to the National Waste Plan for Scotland. SWAG has cross-sector support with representatives from the public, community and private sectors on its Steering Group. The day to day activities of SWAG are managed by Keep Scotland Beautiful.

The Policy Memorandum states that the Environmental Levy on Plastic Bags (Scotland) 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 reuse of those that are; and
- Raising awareness of environmental issues such as recycling and litter.

This submission will concentrate on the issue of raising public awareness of environmental issues, and will be based on research conducted by SWAG and also research carried out on litter by Keep Scotland Beautiful

#### **Raising awareness of environmental issues such as recycling and litter**

##### *1. Current activity on raising public awareness of waste*

Public 'Waste Awareness' has already significantly increased since Phase 1 of the National Waste Plan for Scotland. In 2002, research published by SWAG in the *Public Attitudes to Reduce Reuse Recycle* report indicated that 50% of the public within Scotland was practising some form of recycling. Early indications from a follow up survey currently being undertaken by SWAG, are showing a 33% increase in the public's recycling behaviour to a new level of 83%. This has been achieved through the provision of extensive public and community recycling facilities (Recycling Centres and Points, and Kerbside Systems) and the associated

provision of public information across Scotland via the Waste Aware Scotland campaigning programme. This is demonstrated by the measurable increase in the National Recycling Rate from 6.1% in 2001 to 17.3% in the SEPA 2<sup>nd</sup> quarterly return figure for 2005. Within individual Scottish local authority areas, it is clear that where recycling infrastructure and raised public awareness has been delivered by local authorities and community sector, and supported by the Waste Aware Scotland campaign, this has achieved above-average levels of recycling as exemplified by the following areas:

- Clackmannanshire 38.1%
- Angus 30.3%
- Stirling 27.5%
- East Renfrewshire 26.7%
- Dundee 26.5%

Through this activity the public has gained a greater awareness and understanding of the impact of waste generation and the resulting environmental impacts. This programme of awareness and education will continue as Phase 2 of the National Waste Plan is rolled out. The goodwill built up with the public via the Waste Aware Scotland programme during Phase 1 will be further developed to include integrated waste management solutions and will feature a greater emphasis on waste prevention and reuse.

## *2. Current public behaviour in relation to the use of plastic bags*

Significant attitudinal research (both qualitative and quantitative) has been carried out by SWAG on current public attitudes to household waste. A report was published in 2002, entitled *Public Attitudes to Reduce Reuse Recycle*, based on 5002 doorstep interviews with the public across Scotland. This included information on reuse practices, including those associated with plastic bag reuse. At that time, 77% of the members of the Scottish public indicated that they currently practised some form of reuse behaviour within their own homes, with the most commonly practised behaviour being the reuse of materials. This was achieved primarily through the reuse of plastic bags (84% of these respondents).

A second national public survey towards reduce, reuse and recycle is currently underway, due to report in March 2006. This survey again has a section on reuse, with specific questions referring to current use of disposable plastic shopping bags. Initial results, based on a sample size of 803 members of the public across four Scottish local authority areas (Clackmannanshire, Edinburgh, Falkirk and Renfrewshire) show the following (Appendix 1):

- What members of the public use to carry their shopping:

Members of the public (803) were questioned as to what they currently use to carry their shopping in. The majority of people

(71%) used disposable plastic bags, 23% used stronger reusable bags, with 15% of the public re-using disposable plastic bags, and 11% using their own bags e.g. rucksack etc.

- What would encourage the disposable plastic bag using public to change to using a stronger reusable bag:

Members of the public currently using disposable plastic bags to carry their shopping were questioned as to what would encourage them to shift their behaviour to using a stronger reusable bag. The most common responses were that nothing (25%) would change their behaviour, or that they were unsure as to what would (15%). 6% indicated that a charge for plastic bags would make them change their behaviour.

The primary focus, to date, of the Waste Aware Scotland campaigning programme has been on promoting recycling timely with the roll out of infrastructure. Phase 2 will extend this focus to include waste prevention and reuse. Two exemplars being implemented are:

- The 'Choose to Reuse' campaign that SWAG is supporting in Scotland. This is being trialled in Edinburgh and in Bristol in partnership with WRAP, the Scottish and British Retail Consortia, Scotmid, Tesco, Asda, Co-operative, Boots, Somerfield and Dobbies. This campaign is asking the public to 'Choose to Reuse' any carrier bag and, in particular, durable alternatives to the free bags given away-in store.
- The Waste Aware Grampian - Waste Prevention Campaign. This campaign is to increase the public's understanding and awareness of the concepts of reduce and reuse. This campaign is introducing members of the public to a range of reduce and reuse activities that they can engage in within their local area.

### 3. *The Issue of Litter*

Keep Scotland Beautiful (KSB) monitors the levels of cleanliness and litter in all 32 Scottish Local Authorities by way of the Local Environmental Audit and Management System (LEAMS). The latest full annual report for LEAMS is that for 2003-2004 (Appendix 2).

#### Types and levels of litter

The types and levels of litter found in Scotland's streets and pavements is outlined in Section 2.12 of the LEAMS report. For the 2003-2004 period the main items of litter found were:

- Cigarette litter (cigarette ends, matches, smoking-related packaging) found at 70% of all sites inspected
- Confectionery litter (sweet wrappers, crisp packets, chewing gum wrappers) found at 50% of all sites inspected

- Drinks related litter ( bottles, cans, cups, straws) found at 34% of all sites inspected
- Fast food packaging litter (fish and chip wrappers, burger wrappers, polystyrene cartons, plastic cutlery) found at 10% of all sites inspected.

There is no specific measurement of levels of plastic bag litter in the LEAMS report as plastic bags have not been found to be a significant source of street and pavement litter. Plastic bags are visible in the environment, but by their very nature plastic bags are light and are blown away from streets and pavements to be trapped on trees, bushes, and roadside verges where they are visible and persistent. There is no survey data on the levels of plastic bags on trees, bushes and roadside verges in Scotland, as the legal requirement for monitoring litter levels relates to streets and pavements. It would be useful if resources were made available for a robust survey of plastic bag litter levels outwith streets and pavements.

## **Summary**

Based upon the research carried out by SWAG and KSB and the continuing Waste Aware Scotland campaigning programme, SWAG is not convinced that a plastic bag levy is the major factor that will address all the wide and varied issues associated with raising public awareness of the reduce, reuse and recycling and litter.

Whilst the introduction of a plastic bag levy would further increase public waste awareness, it is clear that this process of awareness-raising is already well established and showing tangible results as part of an integrated communication strategy across Scotland.

There is a requirement to raise awareness of the concept of 'reduce and reuse', and to communicate and inform the public as to the importance of reduce and reuse with respect to individual waste management behaviour. Like recycling, this need to be concurrent with the provision of reduce and reuse infrastructure and information to increase consumer choice. This will allow the members of the public to increase waste reduction and reuse behaviour through personal lifestyle changes that include decreasing consumption, selective product purchasing and product reuse.

## **Appendix I**

### **Preliminary results**

#### **Public attitudes to reduce, reuse, recycle in Scotland, 2005**

1. PRELIMINARY RESULTS OF THE 2005 NATIONAL SURVEY BASED ON FOUR LOCAL AUTHORITIES, SEPTEMBER 2005. THE FINAL REPORT WILL BE BASED ON ALL 32 LOCAL AUTHORITIES EQUATING TO A FINAL SAMPLE SIZE OF 5002 PEOPLE.

**Appendix  
Page Number**

<b>1.</b>	<b>CURRENT LEVELS OF RECYCLING</b>	<b>III</b>
<b>2.</b>	<b>CURRENT USE OF SHOPPING BAGS</b>	<b>IV</b>
<b>3.</b>	<b>REASONS FOR USING DIFFERENT TYPES OF SHOPPING BAGS</b>	<b>V</b>
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<b>5.</b>	<b>ASPECTS RESPONDENTS LIKED ABOUT RECYCLING</b>	<b>IX</b>
<b>6.</b>	<b>ITEMS RESPONDENTS CURRENTLY RE-USE AT HOME</b>	<b>X</b>

## 1. Current levels of recycling

### Q10. DO YOU RECYCLE AT ALL?

Table 1. Whether respondents currently recycle (Number)

Whether respondents currently recycle (Number)	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
<b>Sample size (number of respondents)</b>	803	159	228	193	223
<b>Yes</b>	665	111	187	171	196
<b>No</b>	137	47	41	22	27
<b>Don't know</b>	1	1	0	0	0

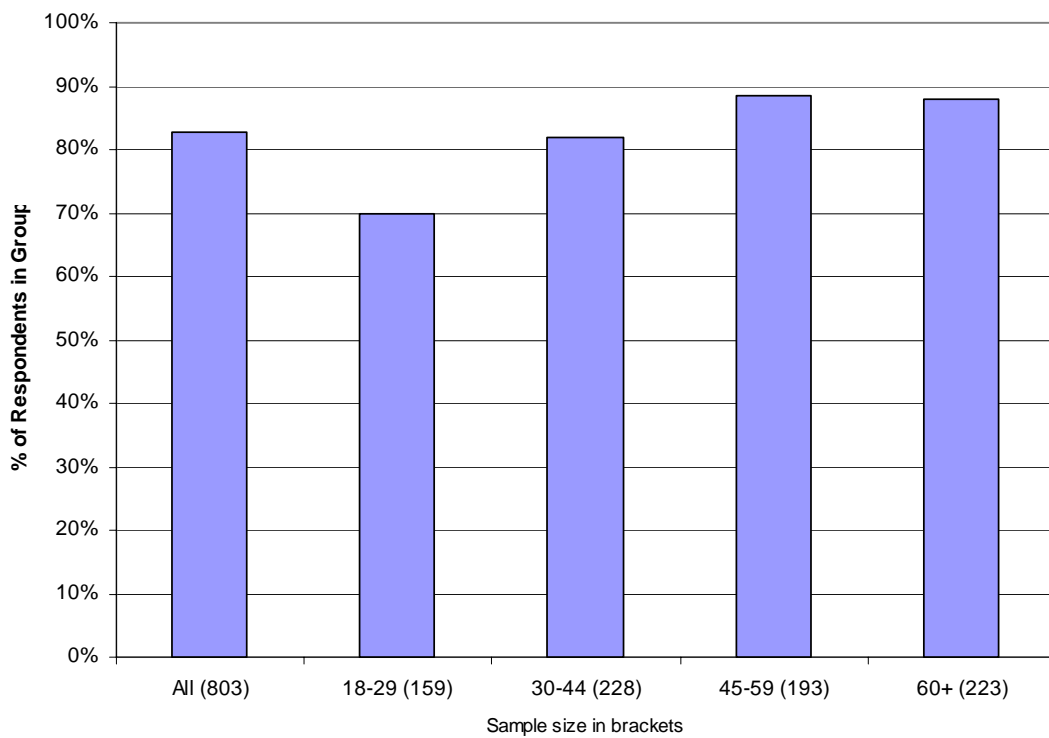


FIGURE 1. PERCENTAGE OF RESPONDENTS RECYCLING IN SOME WAY.



## 2. Current use of shopping bags

### Q72. WHAT DO YOU USE TO CARRY YOUR SHOPPING (WHEN YOU GO SHOPPING)?

Table 2. Methods of carrying shopping

Methods of carrying shopping (Number)	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
Sample size (number of respondents)	803	159	228	193	223
Disposable plastic bags	568	112	165	137	154
Re-used plastic bags	120	32	38	26	24
Boxes	20	5	5	4	6
Rucksack/everyday-use (cloth) bag	88	19	17	19	33
Bag for life (durable material)	187	39	41	56	51
Other	49	2	13	8	26

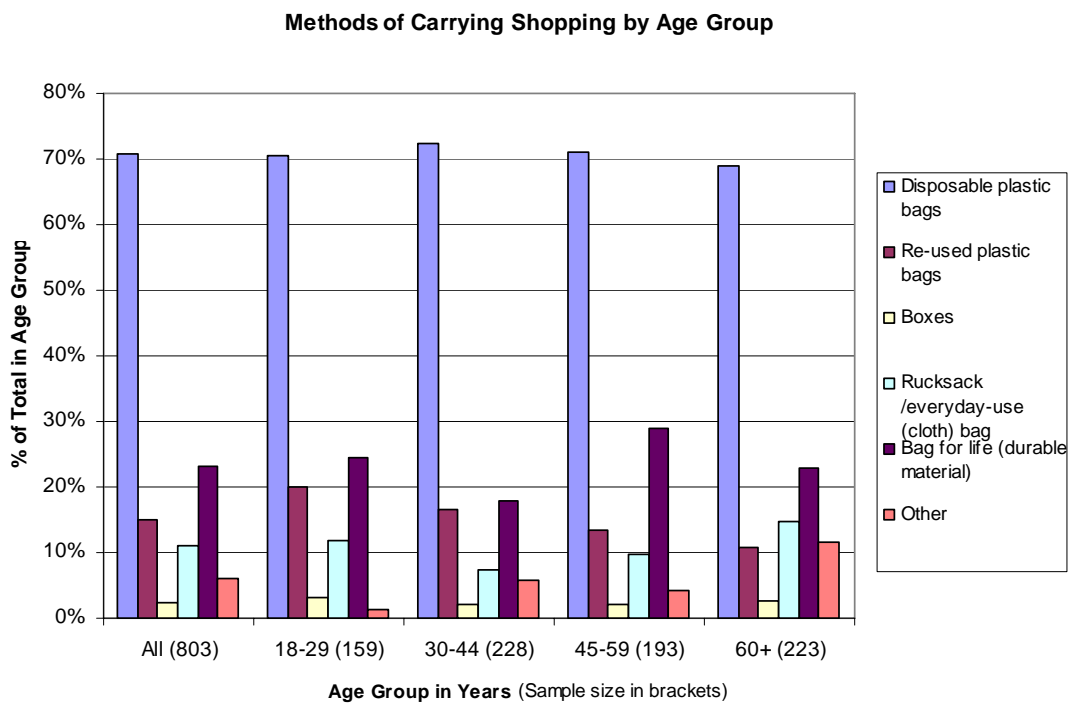


Figure 2. Methods of carrying shopping (percentages).

### 3. Reasons for using different types of shopping bags

#### Q72 a. Why do you re-use plastic bags?

Table 3. Reasons for re-using a plastic bag (numbers)

Reasons for re-using a plastic bag (numbers)	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
Sample size (number of respondents)	120	32	38	26	24
Saves/reduces waste	32	7	12	7	6
Avoids build up of bags	23	5	7	5	6
Environmental reasons	11	5	2	3	1
Reduces use of plastic	15	4	5	4	2
Handy in house	5	2	3	0	0
Shops charge	8	1	4	1	2
As a bin (liner)	2	0	0	2	0
Don't know	1	0	1	0	0
No response	10	4	2	2	2
Other	13	4	2	2	5

#### Q72 b. Why do you use boxes?

Table 4. Reasons for using a box

Reasons for using a box (number)	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
Sample size (number of respondents)	20	5	5	4	6
Convenient/handy/easier	6	0	3	1	2
Saves wasting plastic	7	3	0	2	2
Given by supermarket	1	0	1	0	0
Charge for bags	1	0	0	0	1
Sturdy	1	1	0	0	0
No response	3	1	0	1	1
Other	1	0	1	0	0

### Q72 c. Why do you use this rucksack bag?

Table 5. Reasons for using a rucksack/cloth bag

Reasons for using a rucksack/cloth bag	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
Sample size (number of respondents)	88	19	17	19	33
Avoid using plastic bags	30	8	6	6	10
Easy/convenient to carry	17	3	0	4	10
Saves waste	14	2	6	1	5
Stronger	10	1	2	4	3
Environment	2	2	0	0	0
No response	6	0	1	3	2
Other	9	3	2	1	3

### Q72 d. Why do you use this bag?

Table 6. Reasons for using a bag for life (Number)

Reasons for using a bag for life (Number)	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
Sample size (number of respondents)	187	39	41	56	51
Avoid/reduce use of bags	46	8	9	17	12
Stronger/bigger	50	14	13	7	16
Save waste	20	2	7	6	5
Good for job	6	2	1	1	2
Environment	6	1	0	5	0
Convenient	14	2	2	5	5
Easy to carry	9	3	2	0	4
Can re-use	3	0	1	2	0
Cheaper	6	3	1	1	1
Don't know	1	0	0	0	1
No response	16	3	5	5	3
Other	15	2	2	8	3

### Q72 d. Why do you use this 'other' bag?

Table 7. Reasons for using other method of carrying shopping (Number)

Reasons for using other method of carrying shopping (Number)	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
Sample size (number of respondents)	49	2	13	8	26
Easy/handy	14	1	2	2	9
Mobile/strong	9	0	3	2	4
Avoids bags	5	1	2	1	1
Elderly/infirm	4	0	1	0	3
No response	17	0	5	3	9

**4. Suggestions for Incentives to encourage use of re-usable bags**  
**Q73. What would encourage you to use a stronger, re-usable bag (a 'bag for life')?**

**Table 8. Suggestions for incentives to encourage use of a re-usable bag (Number)**

Incentives to encourage use of a re-usable bag (Number)	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
Sample size (number of respondents)	571	112	173	124	162
Nothing	143	16	49	29	49
Don't know	84	20	21	25	18
Provided free	47	16	16	9	6
Charge for plastic bags	32	12	7	7	6
Already use alternative	37	7	9	5	16
Better/stronger design	35	3	13	10	9
Have one but forget to use	38	4	12	11	11
Would use if available/provided	20	3	9	2	6
Better availability	19	8	6	3	2
Cheaper	12	3	5	4	0
Didn't know about them	6	0	2	0	4
Shops stopped supplying bags	8	1	0	4	3
Don't need/Don't shop	6	1	2	1	2
Prefer paper bags	5	0	1	3	1
Information/education	2	1	1	0	0
No response	42	8	12	3	19
Other	38	10	10	9	9

### Incentives Encouraging Use of Reusable Bags

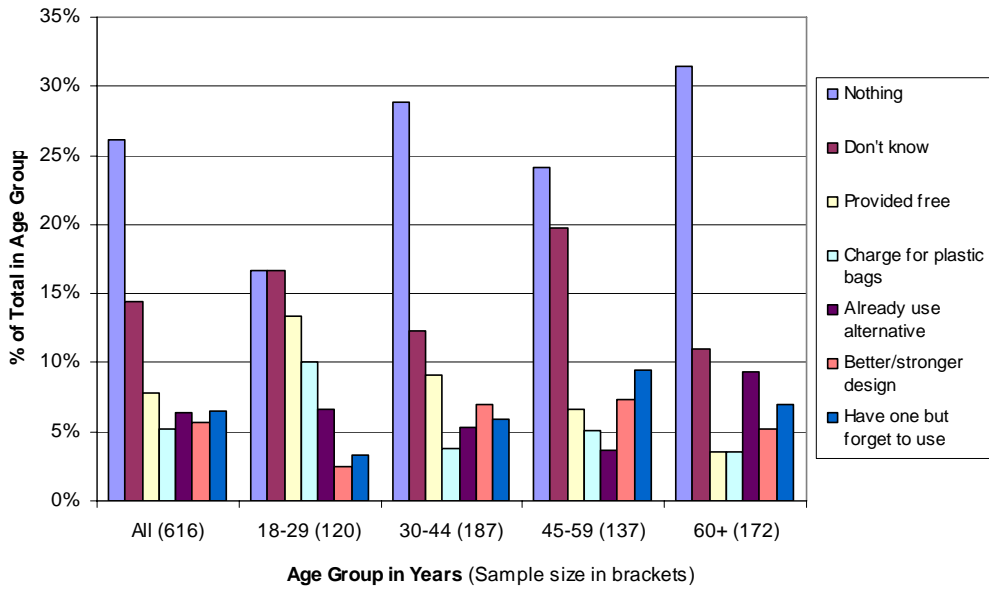


Figure 3. Suggestions for incentives which would encourage use of re-usable bags (percentages)

**5. Aspects respondents liked about recycling**

**Q16, 25, 34. What do you like about this method (kerbside/points/centres) of recycling?**

A variety of aspects were stated and the proportion stating environmental aspects is given in Table 9.

**Table 9. Percentage of respondents stating 'good for environment'**

Percentage of respondents stating 'good for environment'	TOTAL	AGE GROUP (Years old)			
		18-29	30-44	45-59	60+
Sample Size (number of respondents)	506	64	135	137	170
Using Kerbside Service (Q16)	13%	16%	16%	9%	13%
Sample Size (number of respondents)	377	78	117	93	89
Using Recycling Points (Q25)	10%	9%	12%	10%	10%
Sample Size (number of respondents)	317	39	102	103	73
Using Recycling Centres (Q34)	7%	3%	6%	9%	10%

**6. Items respondents currently re-use at home**

**Q70. What items do you currently re-use within your home?**

**Table 10. Materials currently re-used at home (Numbers)**

<b>Materials currently re-used at home (Numbers)</b>	<b>TOTAL</b>	<b>AGE GROUP (Years old)</b>			
		<b>18-29</b>	<b>30-44</b>	<b>45-59</b>	<b>60+</b>
<b>Sample size</b>	803	159	228	193	223
<b>None</b>	222	34	55	51	82
<b>Plastic bags</b>	220	47	53	62	58
<b>Food/drink containers</b>	108	19	35	25	29
<b>Bottles</b>	66	25	23	10	8
<b>Clothes</b>	17	2	8	5	2
<b>Batteries</b>	13	2	3	2	6
<b>Envelopes</b>	9	1	3	1	4
<b>Boxes</b>	7	1	3	2	1
<b>Paper</b>	7	3	3	1	0
<b>Nappies</b>	2	1	1	0	0
<b>Razors</b>	1	0	0	0	1
<b>Toiletries</b>	1	1	0	0	0
<b>Don't know</b>	71	10	21	20	20
<b>No response</b>	1	0	0	0	1
<b>Other</b>	58	13	20	14	11



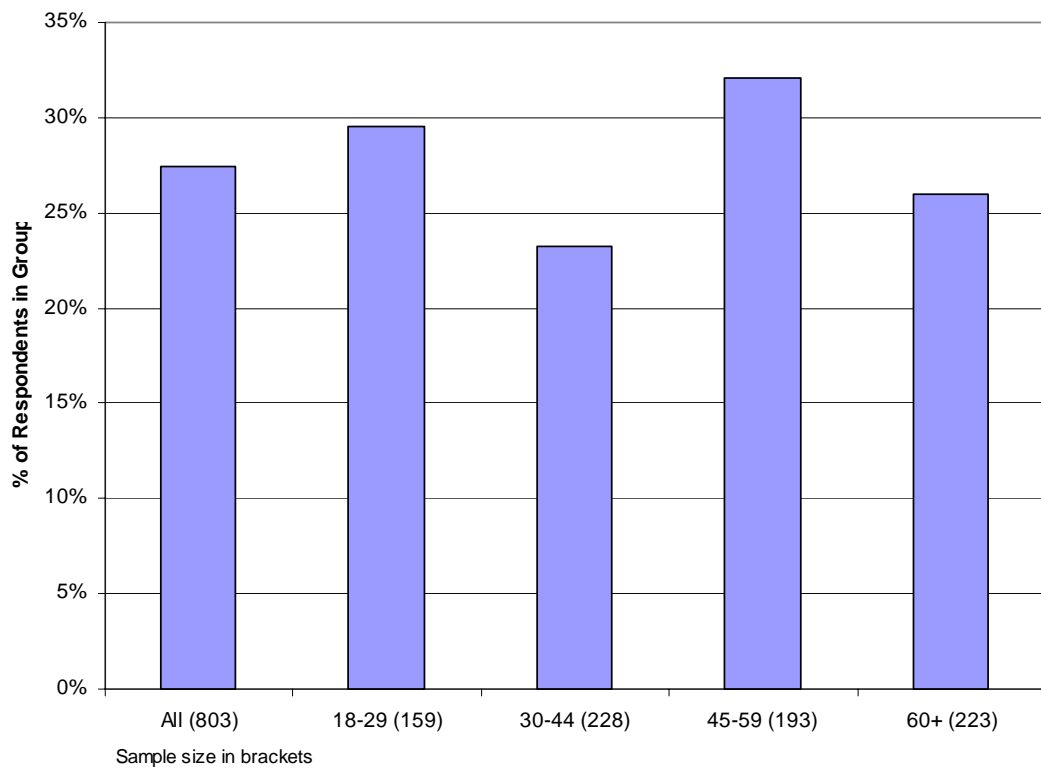


Figure 4. Percentage of respondents currently re-using plastic bags at home by age group.

**SSI DESIGNATION FORM**

<b>SSI Title &amp; No:</b>	The Registration of Fish Sellers and Buyers and Designation of Auction Sites (Scotland) Amendment Regulations 2005, <b>(SSI 2005/438)</b>						
<b>Responsible Minister</b>	Ross Finnie, Minister for Environment and Rural Development						
<b>Standing Order</b>	<b>Affirmative</b>	10.6.1(a)		<b>Negative</b>	10.4		✓
		10.6.1(b)			10.5		
	10.6.1(c)		<b>Other</b>	NL		NP	
<b>Lead Committee</b>	Environment and Rural Development		<b>Other Committee</b>				
<b>Purpose of Instrument</b>	These Regulations amend SSI 2005/286 to remove the offence, provided for by regulation 4(2), of selling first sale fish from a fishing vessel to a buyer who is not a registered fish buyer. The Regulations also amend regulation 8 of SSI 2005/286 to lower the limit for fish bought for personal consumption from 50kg to 25kg.						

<b>Laid Date</b>	9 <sup>th</sup> September 2005	<b>40 day date</b>	3 <sup>rd</sup> November 2005
<b>1<sup>st</sup> SLC Meeting</b>	20 <sup>th</sup> September 2005	<b>20 day date</b>	29 <sup>th</sup> September 2005
<b>Lead Committee Report Due</b>	31 <sup>st</sup> October 2005	<b>Other Committee Report Due</b>	

<b>SE Contact</b>	Sarah Winwood, ext. 44980
<b>Committee Contact</b>	Mark Brough, 85240

**For SLC use:**

<b>Article 10 Compliance</b>	<b>Breaks 10(1) rule</b>		<b>Breaks 10(2) rule</b>		<b>PO Letter dated</b>		<b>PO Letter received</b>	
<b>Revocations</b>	<b>Revokes</b>				<b>Partially Revokes</b>			
<b>Executive Note</b>	✓	<b>Regulatory Impact Assessment</b>	✓	<b>European Regulations/ Directives</b>				
<b>Additional Information</b>								