



**Friends of
the Earth
Scotland**

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

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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.¹

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 Scotland², it is vital that attitudes towards using and throwing away resources are changed.

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

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

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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."³

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.⁴

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.⁵

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%.⁶ 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.⁷ The 90% reduction in plastic check-out bags equates to a reduction of one billion plastic bags

³ http://news.nationalgeographic.com/news/2003/09/0902_030902_plasticbags.html

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

⁵ http://www.guardian.co.uk/uk_news/story/0,3604,1190058,00.html

⁶ AEA Technology Environment, op cit.

⁷ <http://www.wildlifebritain.com/news.cfm/id/232>

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.

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’.⁸

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.⁹ 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.¹⁰ 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.¹¹ 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.¹²

Assuming one in eight bags is LDPE and the rest HDPE, the net environmental benefits would be¹³:

This is the primary source for estimates of direct and substitution effects.

⁸ Convery and McDonnell, 2003. Op cit.

⁹ Ibid

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

¹¹ 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.

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

¹³ These figures are based on data provided by the Australian Bureau of Statistics and Nolan-ITU Pty Ltd (2002) Plastic

480million MJ energy, 12,800t-CO₂ equivalents and 4,270 tonnes of waste avoided (saving as much as 343 thousand cubic metres of landfill space, based on Australian retail sector estimates of landfill space saved by voluntary bag recycling¹⁴).

A reduction of 800million bags consumed would be equivalent to 0.16% of estimated global consumption.¹⁵ 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”.¹⁶ 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.”¹⁷

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.

¹⁴ 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 17,000m³ (based on a 1990 US study by Franklin Associates), but in practical conditions a volume between 80,000m³ (simply assuming that the average plastic bag in landfill were compressed to 1cm³) and the Australian estimate of 340,000m³ would appear more realistic.

¹⁵ InSourced.com

¹⁶ Convery, F. and McDonnell, S. 2003. Op. Cit.

¹⁷ Tom Clarke, President of Chambers of Commerce Ireland. <http://www.chambersireland.ie/index.asp?docID=382> Plastic
