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Environmental Audit
Committee

Plastic bags

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Environmental Audit Committee

The Environmental Audit Committee is appointed by the House of Commons to consider to what extent the policies and programmes of government departments and non-departmental public bodies contribute to environmental protection and sustainable development; to audit their performance against such targets as may be set for them by Her Majesty's Ministers; and to report thereon to the House.

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Summary

Over 8 billion plastic carrier bags are used each year in England, far more than necessary. The Government should follow the approach of the 5p charge for carrier bags in Wales, which has successfully reduced bag use by over 75%. Reducing bag use has significant environmental benefits in terms of lower carbon emissions, resource use and litter.

The charge scheme that the Government is proposing in England, with additional exemptions for small retailers and paper and biodegradable bags, would be too complex, unnecessarily confusing for shoppers, and less effective than the Welsh scheme. The proposed 5p charge should apply to all bag types and all retailers.

We welcome the proposals that the proceeds from the charge, which the Government expects to raise around £70 million, will go to charity. However, Treasury revenue from the VAT on the charge, equal to almost 1p out of every 5p, should also be spent on new environmental projects and on monitoring the impact of the scheme. It should encourage retailers to publicise prominently in store how money received from the bag charge is used.

There is evidence that charging for carrier bags leads to fewer bags being discarded as litter. The Government should focus on making the scheme simple and coherent with other policies to reinforce other positive environmental behaviours. It should take steps to set a minimum price for 'bags for life' at a level which incentivises their reuse.

The largest and simplest environmental gains from carrier bags are from encouraging shoppers to use fewer bags by re-using them. The options for disposal and recycling of bags are complex, with significant risks around contamination, and must be coherent with the Government's wider approach to reducing and managing waste. The proposed exemption for biodegradable bags risks damaging the UK plastics recycling industry, could undermine the reduction in bag use, and is not necessary. It should not proceed.

1 Background

1. In September 2013 the Deputy Prime Minister announced plans to introduce a mandatory five pence charge for single-use plastic carrier bags in England from Autumn 2015.¹ The provision for such a charge had been included in the Climate Change Act 2008.² Wales and Northern Ireland have already introduced a charge on single-use bags, and Scotland plans to introduce a charge in 2014.³ The Republic of Ireland introduced a charge in 2002.⁴

2. In November 2013 the Government launched a consultation on the proposals.⁵ The Government has indicated that it will not replicate the Welsh scheme, which has reduced bag use by 76% (Figure 1), but intends instead to introduce a series of exemptions beyond those applied in Wales. The consultation stated that “some decisions have already been made, such as the size of the charge (5p) and what it applies to (single-use plastic bags)”⁶ and that it will “not include re-usable bags for life or paper bags. Nor will it apply to organisations with fewer than 250 employees”.⁷ The consultation additionally proposes an exemption for biodegradable bags.⁸

3. Over the past decade, many governments have taken initiatives to reduce the sale or use of disposable plastic bags. These include bans, the use of mandatory pricing and voluntary measures.⁹ In Denmark, where plastic bags are taxed, use of thin plastic bags has dropped to an estimated four bags per person each year.¹⁰ In contrast people in England use an average of 133 bags a year,¹¹ whilst use in Wales has fallen to 22 per person.¹²

4. In England, the Government has until now relied on voluntary schemes to try to reduce bag use. Supermarkets gave out 7.1 billion single-use plastic carrier bags in 2012,¹³ and high street retailers a further 1.5 billion.¹⁴ However, although voluntary measures initially

1 Defra and Office of Deputy Prime Minister press release [‘Plastic bag charge set to benefit the environment’](#) 14 September 2013.

2 [Climate Change Act 2008](#), 577; This enables the Government to require sellers of goods to charge for single-use plastic bags that they supply to their customers.

3 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 5

4 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 33

5 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013

6 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 13

7 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 9

8 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 40-47

9 Dr Wouter Poortinga ([BAG 001](#)), para 2

10 European Commission, [MEMO/13/945](#) 4 November 2013

11 Wrap’s [analysis](#) states that usage in England was 11.2/month per person in 2012. However, this uses 2011 population data. Using 2012 population data ([ONS data](#) which gives total population in England for 2012 as 53,493,700) the total is 132 bags per person.

12 Wrap submission states that people in Wales use 1.8/month: WRAP ([BAG 031](#)) para 11; However, this uses 2011 population data- using 2012 [ONS data](#) gives a population of 3,074,100, and usage of 1.9/month or 23 bags a year- although this is sensitive to rounding.

13 <http://www.wrap.org.uk/content/wrap-publishes-new-figures-carrier-bag-use>

14 Defra ([BAG 032](#)), para 16

reduced the number of bags taken by shoppers,¹⁵ the number of plastic bags used in England increased by 4% last year.¹⁶ Following the introduction of a charge use has fallen by 76% in Wales in the same period.

Figure 1 Number of single-use carrier bags issued in supermarkets

Nation	2010	2011	2012	% change (2011–2012)
England	6.29bn	6.77bn	7.06bn	+4%
Wales	0.35bn	0.27bn	0.07bn	-76%*

* On 1 October 2011 Wales introduced a charge for single use carrier bags. The data for 2012 represents the first full calendar year of reporting under that charge.

Source: [WRAP](#)

5. The Republic of Ireland was the first country in the world to implement a minimum charge through its plastic bag tax in 2002. This was initially set at 15 cent (12p¹⁷) per bag, but was increased to 22 cent (18p) in 2007. Bag use in the Republic of Ireland has fallen by 90%.¹⁸ Revenue from the tax goes into a dedicated environment fund. Italy introduced a law prohibiting the distribution of single-use plastic bags in 2011, although an exemption was later allowed for compostable bags. The UK Government has opposed the Italian ban, considering it illegal under the European Packaging Directive and requiring a full derogation to the single market for all ‘light-weight bags’¹⁹ (although we heard that the European Commission has not chosen to intervene on the Italian ban).²⁰

6. In November 2013, the European Commission adopted a proposal that requires Member States to reduce their use of lightweight plastic carrier bags. The proposal amends the Packaging and Packaging Waste Directive to encourage states to adopt measures to reduce the consumption of thin plastic carrier bags. It would allow taxing or banning plastic bags, as long as these measures do not impose significant restrictions in the internal market.²¹

7. Our aim in this inquiry was to examine the Government’s proposals for a carrier bag charge in England. We took oral evidence from the Welsh Government; a behavioural psychologist who evaluated the impact of the Welsh scheme; WRAP (the Government’s advisory body on waste); British Retail Consortium; a member of the ‘break the bag habit’

15 In December 2008 seven of Britain’s leading supermarkets – represented by the British Retail Consortium (BRC) – signed up to a voluntary agreement with the Government to cut the number of carrier bags distributed by the end of May 2009 by 50% (against 2006 levels). The target was narrowly missed (the reduction was 48% for the UK as a whole); Defra, [ARCHIVE: Carrier bag waste](#) Last updated March 2010; WRAP ([BAG 031](#)), para 7

16 However, although more bags are being used, as bags have got thinner the total material used has fallen. In 2012, total carrier bags weighed 70,400 tonnes in the UK. This compares to 109,800 tonnes in 2006 and 72,300 tonnes in 2011. These figures represent a reduction of 36% since the baseline year of 2006; WRAP ([BAG 031](#)), para 20

17 All Euro values based on exchange rate at 28/1/2014 source: xe.com

18 Convery, F., McDonnell, S. Ferreira, S. (2007) [‘The most popular tax in Europe? Lessons from the Irish plastic bags levy’](#) Environmental Resource Econ 38:1-11

19 Defra ([BAG 032](#)), para 30

20 Qq118-121

21 European Commission Press Release [IP/13/1017](#) 4 November 2013; The Government’s proposals for a 5p charge in England are part of its [Waste Prevention Programme](#) which was published in December 2013. This is required under the revised EU Waste Framework Directive ([2008/98/EC](#)).

litter group (the Campaign to Protect Rural England); recyclers and industry groups; and Defra Minister Dan Rogerson MP.

8. In this report we first examine the aims of the proposed scheme. In Part 2 we examine the whether the design of the proposed scheme will be effective in changing shoppers' behaviours to use fewer bags and benefit the environment, and in Part 3 we examine the case for the exemption from the charge for biodegradable bags.

Aims of the bag charge

9. The Government expects that the charge “will reduce the number of plastic bags used in England and increase their reuse, with an associated reduction in littering”²². Its *Call for Evidence: Single-Use Plastic Bag Charge for England* notes that:

Discarded plastic bags are an iconic symbol of waste. They are a very visible form of littering and can cause injury to marine wildlife. The environmental impact of plastic bags extends beyond their littering. They consume resources, including oil, in their creation. Even when disposed of responsibly, plastic bags can last for long periods of time in landfill sites.²³

Defra told us that its “main aim remains to reduce the distribution of plastic bags, and tackle waste and littering, with reuse and eventual recycling being important secondary aims.”²⁴ The Defra Minister also told us:

the main aim originally was around this issue of littering and the concern that we have all had on that. Clearly, there is another gain for us in terms of the reduction in carbon emissions, but the key measure of success will be how many fewer of these bags are going into circulation.²⁵

10. Groups concerned with the environmental impact of litter, including a ‘break the bag habit’ group, are campaigning for the introduction of a charge for all single-use carrier bags.²⁶ Marine Conservation Society, a member of this campaign, told us:

plastic bags are an ubiquitous, widely dispersed, long-lasting, unsightly and hazardous form of litter that, whether whole or broken down into micro-particles, pose a threat to marine wildlife many of which are already endangered or threatened by human exploitation or activities.²⁷

Keep Britain Tidy, which publishes annual data on litter, told us “in 2012–13 in England 9% of sites surveyed as part of the Local Environmental Quality Survey for England had

22 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 7

23 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 1 and 2

24 Defra ([BAG 032](#)), para 2

25 Q54

26 the Break the Bag Habit coalition includes The Campaign to Protect Rural England, Keep Britain Tidy, Surfers Against Sewage, Thames 21 and Greener upon Thames; Campaign to Protect Rural England ([BAG 023](#)), para 4

27 Marine Conservation Society ([BAG 013](#)), para 1

single-use carrier bag litter present. This is a slight decline from 10% in 2009–10 but shows bags still blight almost 1 in 10 of all places in England”.²⁸

11. Packaging and Film Association (PAFA) believed that other types of litter are more significant than plastic bags.²⁹ The most common materials found in the Keep Britain Tidy survey were smokers’ material (82% of locations), confectionery material (68%), non-alcoholic drinks material (52%) and fast food material (32%), whilst supermarket bags were found in 3% of survey sites and other retail bags were found in 6%.³⁰ Barry Turner of PAFA told us “by focusing on this area, you are potentially misleading the general consumer to think that we are dealing with an issue of far greater significance than it is.”³¹ However, Campaign to Protect Rural England told us that plastic bags have a greater visual impact than other types of litter:

Single-use bags, and plastic carrier bags in particular, are a huge litter problem They are very conspicuous in terms of their volume and the fact that they get blown around.³²

As part our Well-being inquiry, we heard that litter also has an impact on people’s sense of community cohesion and trust. Dr David Halpern, of the Cabinet Office’s Behavioural Insights team explained:

Seeing a messy environment—bags around or whatever—affects how you feel about other people, and we know that from a number of other studies. It looks like a rule has been broken because of litter; in fact, is a classic example. It leads to other kinds of problems. It changes how you feel about other people. We have already established that social trust is important. How do you know whether other people can be trusted? You infer it from the environment.³³

12. There is evidence that charging for carrier bags leads to fewer bags being discarded as litter. In Ireland, the proportion of plastic-bag litter dropped from 5% prior to the introduction of the plastic bag levy to 0.2% in 2004. Academics studying the Irish tax concluded that there had been an “associated gain in the form of reduced littering and negative landscape effects”.³⁴ There is not yet sufficient data to draw firm conclusions in Wales, but there are some indications that numbers of bags discarded as litter have fallen. Keep Wales Tidy told us that there has been a reduction in the proportion of streets where carrier bags were found since the charge:

28 Keep Britain Tidy ([BAG 022](#)), para 1

29 Packaging and Films Association (PAFA) ([BAG 009](#), para 3.2

30 Keep Britain Tidy, [‘How Clean is England?: The Local Environmental Quality Survey of England 2012/13’](#), p17

31 Q32 [Barry Turner]

32 Q32 [Neil Sinden]

33 Oral evidence taken on 15 January 2014 on Well-being, [HC59iii](#) Q141; References: Keizer, Lindenberg, Steg, (2008) [‘The Spreading of Disorder’](#) Science; Cialdini, Goldstein (2004) [‘Social influence: compliance and conformity’](#), Annual Review of Psychology; Krauss, Freedman, Whitcup (1978) [‘Field and laboratory studies of littering’](#), Journal of Experimental Social Psychology.

34 Convery, F., McDonnell, S. Ferreira, S. (2007) [‘The most popular tax in Europe? Lessons from the Irish plastic bags levy’](#) Environmental Resource Econ 38:1-11

In the full survey year prior to the introduction of the levy, carrier bags were found on an average of 1.1% of each local authority's streets. Since the introduction of the levy that figure has dropped to 0.9%. The percentage of streets littered with carrier bags has reduced in 12 of the 22 local authorities and remained the same in a further four.³⁵

13. In 2006, the Environment Agency commissioned research into the environmental impact of plastic bags, which concluded that “the environmental impact of plastic bags is dominated by their resource use and production. Transport, secondary packaging and end-of-life processing generally have a minimal influence on their environmental performance”.³⁶ The study estimated that the bags needed to carry a month's worth of shopping (82 single-use plastic bags) would be responsible for carbon emissions equivalent to 1.578kg CO₂³⁷ — approximately equal to those from travelling 5 miles in the average petrol car.³⁸ In their evidence to our inquiry Defra initially misinterpreted the Environment Agency figures as the carbon emissions for a single bag rather than eighty-two. When we pointed this out to Defra, they confirmed that instead of “permanently taking 1.7 million to 2.7 million cars off the road”, as the Minister told us on 18 December,³⁹ the correct figure is 32,000 to 43,000 cars.⁴⁰ The analysis used by Defra to inform their policy therefore substantially over-estimated the carbon impact of plastic bags.⁴¹ However, whilst considerably lower than Defra initially stated, this impact is still significant and the Government should do everything to ensure that the policy achieves the greatest reduction possible.

14. The carbon impact of a carrier bag is modest, but given the numbers of bags used a large decrease in use will significantly reduce carbon emissions. The plastic bag charge will not solve the problems of litter, but offers an opportunity to reduce the numbers of plastic bags that end up as litter by encouraging reuse, and potentially the impact of those in the natural environment.

15. The Government has multiple aims for the plastic bag charging policy, including reducing emissions, waste, and litter, but has not adequately determined their relative

35 Keep Wales Tidy ([BAG 041](#)); They add that “street-data is likely to significantly understate the extent of littered carrier bags. This owes to the physical properties of carrier bags which render them not readily degradable, meaning they persist for long periods in the environment and are easily transportable by weather, causing wide dispersal.”

36 Environment Agency, ‘[Life cycle assessment of supermarket carrier bags: a review of the bags available in 2006](#)’ Report SC030148 Executive Summary

37 Environment Agency, ‘[Life cycle assessment of supermarket carrier bags: a review of the bags available in 2006](#)’ Report SC030148; This assumes 40% re-use of these bags- without it the emissions increase to 2.098kg – see table 6.1 p46 and Figure 2 of this report; The number of bags needed for a month's worth of shopping is the ‘reference flow’ – see table 3.1 p18; We have checked that our interpretation is correct with Intertek, the authors of the report.

38 The [Carbon Trust](#) state (p4) that an average petrol car emits 0.318827kg CO₂e per mile.

39 Q49 [Dan Rogerson]; Footnote 15, para 19 of Defra ([BAG 032](#)) indicates that Defra are using ‘1.57 kg co2e per bag’.

40 After we pointed out their error, Defra provided us with revised figures ([BAG 0049](#)). Our own analysis, suggests that given the average annual car mileage is 8,200 miles ([National Traffic Survey 2012](#)), the average car produces 2,614kg CO₂e/year (see footnote 38). Using a figure of 0.019kg CO₂e per bag, a 75% reduction in bag use (equivalent to 5,295 million bags) would be equivalent to an annual reduction of 102,025 metric tonnes CO₂e or the equivalent annual emissions of 39,024 cars.

41 The draft EC [impact assessment](#) does the same- (footnote 12, p14 of Impact Assessment)

priority. Before proceeding it should have undertaken a structured appraisal of the evidence on the potential environmental gains associated with each objective and the extent to which the charge and type of bag would secure these gains, along with an assessment of their associated risks and wider impacts. It needs to ensure its analysis is robust and accurate.

2 Reducing bag use

16. The evidence we have received suggests that re-using bags is the most effective way to reduce their environmental impact. David Newman of the Italian Association of Composters told us that the best plastic bag is “the one you don’t see and you don’t use.”⁴² Professor Thompson of Plymouth University believed that “the clearest message ... is reduction in use”.⁴³

Behaviour change

17. There is strong evidence that a charge for plastic bag use leads people to use fewer bags. Dr Poortinga of Cardiff University, an expert in environmental psychology who evaluated the Welsh scheme,⁴⁴ told us that most charging policies for plastic bags have been effective.⁴⁵ He believed that a charge is a “habit disruptor” that forces shoppers to make a conscious decision as to whether they want to use a plastic bag or not.⁴⁶

18. A charge is typically twice as effective in reducing the use of single-use carrier bags as voluntary approaches. Dr Poortinga reported that field experiments in which supermarket shoppers received prompts, or “persuasive normative messages”, reduced carrier bag use by 20%–40%.⁴⁷ In a similar vein, the British Retail Consortium told us:

We have found that there is a difference between the reduction in Wales, which did introduce a charge, and England. That is not for want of trying by retailers. You will probably be aware that, wherever you shop, there are plenty of messages and staff are trained to encourage people to reuse carrier bags or use bags for life.⁴⁸

19. There is extensive research showing that simplicity is the key to successful behaviour change policies.⁴⁹ Dr Poortinga told us that the proposed exemptions in England for biodegradable bags (Part 3) and small retailers (paragraph 37) “gives mixed messages; for the consumer, it is not very clear”, and concluded that “it would be less effective than a

42 Q111 [David Newman]

43 Q111 [Professor Thompson]

44 Poortinga, W, Whitmarsh, L. Suffolk, C. (2013) ‘[The introduction of a single-use carrier bag charge in Wales: Attitude change and behavioural spillover effects](#)’. *Journal of Environmental Psychology* 36: 240-247

45 Q3

46 Dr Wouter Poortinga ([BAG 001](#)), para 18

47 Dr Wouter Poortinga ([BAG 001](#)), para 17

48 Q35

49 For instance, in March 2010 the Cabinet Office and Institute for Government published [MindSpace: Influencing behaviour through public policy](#), which discusses the scope for using behavioural sciences in policy-making. It also identifies that changing the ‘default’ option, and ensuring consistent messaging are also important. Cass Sunstein, whose book ‘Nudge’ (Penguin, 2009) with Richard Thaler inspired a lot of the work of the government’s behavioural insights work, has recently written a book ‘Simpler: The Future of Government’ (Simon and Schuster, 2013) in which he makes the case that complexity is costly and potentially harmful.

charge on all types of carrier bags”.⁵⁰ The British Retail Consortium, similarly, believed that “if the charge is introduced as currently proposed, retailers will be faced with complex messages to communicate to shoppers.”⁵¹ Campaign for the Protection of Rural England and Waitrose arrived at similar conclusions.⁵² The Welsh Government concluded that it is not necessary to take such a complex approach. Matthew Quinn from the Welsh Government told us:

Given that our approach [in Wales] was to look at total resource use and attitudinal change—also, to be honest, we considered simplicity for the consumer—we took the decision to go with all bags and all retailers.⁵³

20. Wales achieved a 76% reduction in single-use bags through a 5p charge, and Defra estimated that a similar charge in England would result in 4.2–5.6 billion (60–80%) fewer single-use plastic carrier bags being used and discarded each year.⁵⁴ **Given that the proposed English scheme would have more exemptions than the one in Wales, it is likely that the reduction in bag use would be lower than the 76% achieved in Wales. Without additional complexity from exemptions for small retailers (which we discuss below) and for biodegradable bags (which we discuss in Part 3), it might achieve as large a reduction in bag use and littering.**

21. Wales, Northern Ireland and Scotland have each set the charge at 5p, whereas the Republic of Ireland has set it far higher. Matthew Quinn told us that Wales “originally consulted at 7p, and that was set after economic work”, but was reduced to 5p after retailers said it would be easier to administer at that level.⁵⁵ The charge in the Republic of Ireland was deliberately set six times higher than the average level that consumers reported that they would be willing to pay for a bag to strongly influence consumer behaviour, and led to a 90% reduction in use (paragraph 5).

22. Dr Poortinga suggested that in the longer term the charge might need to be raised in order to retain its effectiveness. Studies that have tracked carrier bag use have suggested that use may start to increase again some years after the introduction of a charge.⁵⁶ Ireland increased its charge to 22 cent (18p) in 2007, with the aim of keeping plastic bag per capita usage to no more than 21.⁵⁷ Northern Ireland originally proposed a rise in the charge to

50 Q13

51 British Retail Consortium ([BAG 028](#)), para 2.1

52 Q39 [Neil Sinden]; Waitrose ([BAG 027](#)), para 7.2

53 Q11

54 Defra ([BAG 032](#)), para 20; Defra estimate that this could save between 31,600 and 42,100 tonnes of waste, given that the weight of single-use plastic bags used by supermarket customers in England in 2012 was 52,600 tonnes.

55 Q6; the economic analysis was looking at what would not create economic disbenefit but would create sufficient incentive

56 Convery, F., McDonnell, S. Ferreira, S. (2007) [‘The most popular tax in Europe? Lessons from the Irish plastic bags levy’](#) Environmental Resource Econ 38:1-11; Dr Wouter Poortinga ([BAG 001](#)), para 19

57 [Irish Government](#) Current levy

10p in April 2014, but this has now been cancelled as, according to Defra, the charge has been so successful.⁵⁸

23. Although there is evidence that higher charges can achieve greater impact, a charge set at 5p has been shown to be highly effective in Wales in substantially reducing use. Evidence from Ireland suggests that increasing the size of the charge, or having a credible threat to do so, is important for sustaining changed behaviours. The Government should implement a 5p charge for all single-use carrier bags, following the example of the scheme in Wales, but should review the level of the charge after two years to assess if an increase is necessary.

Bag material: environmental impact

24. Dr Swannell of WRAP told us that deciding on the best material for bags involved complex judgements, including its potential impact in the marine environment.⁵⁹ An Environment Agency study in 2006 (paragraph 13), comparing the resources and carbon emissions needed to produce, transport and dispose or recycle different types of bag, showed that thin plastic bags have the lowest environmental impact in terms of emissions (Figure 2).

Figure 2: Carbon impacts of different types of bag

Type of carrier bag	Carbon impact if not re-used (kg CO ₂ e for a month's worth of bags)	Number of times used to have less environmental impact than a single-use plastic bag used once and thrown away
Thin single-use High-density polyethylene (HDPE) plastic bag	2.08	
HDPE bag with a prodegradant additive ('Oxo-biodegradable')	2.25	
Starch bag ⁶⁰	4.69	2
Paper bag	5.52	3
Low-density polyethylene (LDPE) bag—thin bag for life	6.92	4
Non-woven PP bag—Thicker bag for life	21.51	11
Cotton bag	271.53	131

Source Environment Agency, 'Life cycle assessment of supermarket carrier bags: a review of the bags available in 2006'⁶¹

25. The Government has proposed that the 5p charge will apply only to single-use plastic bags. It would not apply to paper bags, or to others not containing plastic.⁶² The

58 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 31

59 Q20

60 In this study, a starch-polyester blend was used

61 Contents of first column taken from Table 6.1, p46 HDPE, oxo-biodegradable, starch); Table 5.4, p40 (paper); Table 5.5, p41 (LDPE); Table 5.6, p43 (PP); Table 5.9, p44 (Cotton)

62 The Call for Evidence states: 'a plastic bag is a bag that is fully or partly made from plastic. (Para 27)

Government is also proposing that biodegradable bags are exempt from the charge (Part 3).

Proposed exemption for paper bags

26. The evidence from life-cycle analysis suggests that a paper bag needs to be reused at least three times to make its emissions impact lower than that of a typical single-use plastic carrier bag (Figure 2). British Retail Consortium (BRC) told us that in the Republic of Ireland, which only applied the charge to plastic bags, some retailers turned to using paper bags instead.⁶³ BRC warned that not including paper bags in any charging scheme in England “would increase the environmental impact of single-use bags which runs contrary to the aims of the proposed charge.”⁶⁴

27. The Welsh Government decided to apply the charge to all bags in order to prevent such substitution. They told us:

Our experience from looking at the issue and speaking to colleagues is that, if you exempt some types of bags, there are substitution effects into those bags. If you exempt paper or compostables, you get more use of those. The work that the Environment Agency did for us suggested that those bags had a greater environmental impact in the round than a light-gauge, single-use bag. It did not look attractive for us to do that.⁶⁵

The Government told us that it did not think that any increase in use of paper bags would be significant:

Paper bags are exempted under the carrier bags levy in the Republic of Ireland. Officials there have confirmed that there was no switch to paper in the grocery sector. However, high street retailers did switch to paper bags. The Government has calculated that even if customers of large retailers increase their paper bag use by 50% there would still be a negligible environmental impact in terms of carbon emissions (3,500 tonnes CO₂ equivalent representing less than 4% of the savings from plastic bags) due to the very low current levels of use. As paper bags are not a substantial issue for the marine environment or long lasting litter, and many of the current uses of them would be exempt under the charge due to size of organisation, charging is not considered necessary.⁶⁶

However, there is little basis for the Government’s assertion that paper bag use might only rise by 50%, which it presents as a worst case scenario. Given the current low levels of use of paper bags amongst high street shops, if large retailers transferred to using paper bags,

63 Q37

64 British Retail Consortium ([BAG 028](#)), para 4.2.5

65 Q23

66 Defra ([BAG 049](#)), para 26

the increase could be significantly higher than this.⁶⁷ There are few data currently collected and published about bag use amongst high street retailers, so this change would currently be hard for the Government to monitor.

Paper bags can have a greater emissions impact than plastic bags. Exempting paper bags from the charge, as the Government proposes, would weaken the message to reuse bags, diminish the impact of the charge and the likely reduction in the number of bags used and associated environmental benefits. The Government should therefore include paper bags in the charge.

Impact of re-using bags

28. The environmental impact of an individual carrier bag reduces if people reuse it many times. Figure 2 shows that some types of bag would need to be reused for shopping many times in order to avoid an emissions impact greater than that of a single-use bag. A reusable cotton bag, for example, would need to be reused over 130 times (equivalent to daily use for over 4 months) to have the same impact as a thin plastic bag used once. This would increase to 393 times if the plastic bag were used three times.

29. Using carrier bags for waste disposal, such as for lining bins, also reduces their environmental impact by displacing the need to purchase additional swing-bin and pedal-bin liners. As a result of the introduction of a carrier bag charge in Wales, WRAP observed an increase in purchases of these bin bags.⁶⁸ They estimated that 11 million more bin bags were sold in Wales in 2012 than there would have been had the carrier bag charge not been introduced. This equated to 80 tonnes of plastic; negating only 4% of the amount of material saved through the reduction in use of thin-gauge carrier bags.⁶⁹

30. Defra consider that “the expected reduction in lightweight plastic bag usage, and anticipated trend towards re-usable bags, will minimise the impacts of the charge on consumers”.⁷⁰ The Welsh Government told us that this was something that they had “looked at quite hard”, but concluded that their scheme did not disproportionately affect those on low incomes, and added “if anything, it is possibly the opposite”.⁷¹

31. Some have raised the potential for reusable bags to harbour dangerous bacteria that might cause food poisoning. Professor Hugh Pennington of University of Aberdeen has suggested that bacteria from raw meat or soil-covered vegetables could be transferred to the inside of a reusable bag and contaminate food.⁷² The Welsh Government had sought advice from the Food Standards Agency and decided to exempt bags used for unwrapped

67 Indeed Eunomia (2012) '[Assistance to the Commission to Complement an Assessment of the Socio-economic Costs and Benefits of Options to Reduce the Use of Single-use Plastic Carrier Bags in the EU](#)' assumes that 50% of retailers could shift from plastic bags to paper, which, given the large number of retailers currently using plastic bags, would result in an increase in paper bag use far higher than 50%.

68 WRAP (2013) '[Effect of charging for carrier bags on bin bag sales in Wales](#)'

69 WRAP ([BAG 031](#)), para 14

70 Defra ([BAG 032](#)), para 34

71 Q28

72 '[Why bags for life could be carrying germs](#)' BBC news 29 October 2013

foods. They told us that they had no evidence of any increased food poisoning as a result of the charge in Wales. Against that background, the Government's proposal to exempt bags used for unwrapped food is a sensible public health precaution.

32. 'Bags for life', thicker plastic bags designed to be durable enough to be used many times, will only be more environmentally sustainable if they are repeatedly reused. WRAP have collected evidence from Wales on the numbers of bags for life that were sold, using data from five retailers. Between 2010 and 2012, the number sold more than doubled, whereas those sold in the rest of the UK fell for those same retailers.⁷³ A study funded by the Welsh Government and Zero Waste Scotland found that whilst 79% of people in Wales say that they reuse a bag for life in supermarkets, only 51% actually do so. This is nevertheless nearly double the level observed in Scotland (28%), which currently does not have a charge.⁷⁴

33. Some shoppers do not realise that they can return bags for life to be replaced, if they break. The Welsh Government and Zero Waste Scotland study observed over 9,000 consumer purchases in different shopping sites,⁷⁵ and found that:

Even though the intrinsic promise made when purchasing a bag for life is that the bag will be replaced with a new one at end of life, once represented to the retailer only 7 Welsh and no Scottish shoppers were observed replacing a bag for life in this way.⁷⁶

Encouraging free replacement and recycling of bags for life at the end of their usable life reduces the cost to consumers, but more importantly could also help reinforce the habit of reuse. Retailers should clearly communicate to shoppers that they can obtain a free replacement at the end of the bag's useable life, so that the charge for bags for life this is a one-off cost. Supermarkets should ensure there are systems to recycle these bags.

34. Actual usage of more durable bags depends on people changing their habits to bring bags with them. A thin bag for life needs to be used four times as often as a single-use plastic bag used once, and thicker bags for life would need to be used 11 times as often (Figure 2). Ireland, recognising the need to incentivise this reuse has made plastic shopping bags designed for reuse exempt from its bag tax provided the retailer charges at least 70 cent (58p) for the bag—three times the charge for a standard bag.⁷⁷

35. The Climate Change Act 2008 does not provide for a charge to be applied to multi-use bags. Analysis into consumer behaviour in Wales observed:

Heavy duty plastic bags for life retail for 6–10p per bag and it was observed that some retailers are pushing the use of heavy duty plastic bags for life to consumers at tills. If these are in fact not being reused and replaced as

73 WRAP ([BAG 031](#), para 12)

74 Welsh Government and Zero Waste Scotland (2013) '[Behaviour Study on the re-use of plastic bags](#)' P5

75 4884 Wales and 4645 Scotland transactions were observed

76 Welsh Government and Zero Waste Scotland (2013) '[Behaviour Study on the re-use of plastic bags](#)' P5

77 [Irish Government](#) Alternatives to disposable bags

intended this may have unforeseen unfavourable effects on the environment in the wider context.⁷⁸

Overall, the increase (by weight) in bags for life purchased in Wales negated around 30% of the reduction in the weight of thin-gauge bags given out.⁷⁹ The Welsh Government is considering taking reserve powers to ensure that bags for life are priced higher.⁸⁰ The Government says that it would seek a voluntary agreement to charge higher prices for these bags in England:

We would expect retailers to keep a clear differential in pricing between Bags for Life and single-use plastic bags. As an example, selling single-use plastic bags for 5p and Bags for Life for 6p would not illustrate clearly enough to customers the significantly-greater environmental impact of the Bag for Life and the need to reuse them at least four times.⁸¹

However, evidence from Wales suggests that this is unlikely to be sufficient.

36. With the introduction of a charging scheme for single-use bags, the Government should be ready to introduce legislation to ensure that retailers sell ‘bags for life’ at an appropriate higher price than the charge for single-use bags, taking into account their greater emissions impact. The Government should set a minimum price for bags for life at a level which incentivises their reuse; perhaps a minimum of 10p for a thin and 20p for a thick bag for life that could subsequently be replaced for free if it breaks. The Government should ensure any additional proceeds of these charges also go to charity, with retailers allowed to recover the cost of such replacements.

Retailers

Proposed exemption for small retailers

37. The Government has proposed that only retailers with more than 250 employees would be covered by the mandatory charge. It is not consulting on this aspect of the scheme. The Government wants to “ensure that [small retailers] are not disproportionately burdened”,⁸² and cited a 3-year freeze on new regulation for businesses with fewer than 10 employees introduced in 2011.⁸³ Since provision for the charge was made in the Climate Change Act 2008, it is arguable that it is not a ‘new’ regulation—furthermore its proposed implementation in 2015 is beyond the timeframe of the 3-year regulatory freeze.

38. The evidence we received suggested that many small retailers oppose the exemption and would like to participate. The Minister told us that Defra had not received any

78 Welsh Government and Zero Waste Scotland (2013) [‘Behaviour Study on the re-use of plastic bags’](#) p4

79 WRAP ([BAG 031](#), para 13)

80 Q21

81 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 54

82 Defra ([BAG 032](#), para 32)

83 Defra ([BAG 032](#)), para 31

submissions from retailers wanting to be excluded from the scheme.⁸⁴ National Federation of Retail Newsagents told us:

We support the policy in light of the benefits it can bring to the environment, local communities and businesses. Therefore we were disappointed to learn that the government intends to exclude small retailers from the levy as our members will not be able to participate or share in the benefits of scheme.⁸⁵

Association of Convenience Stores also wanted a wider coverage of retailers included in the scheme:

It would be difficult for retailers with stores in other parts of the UK to differentiate between the requirements for the different schemes. The inconsistency between large and small stores would create confusion for customers, and make messaging harder to communicate. It could create a misleading perception that larger stores are more socially or environmentally responsible.⁸⁶

39. The Government's solution is to suggest that small businesses can choose to charge for bags if they wish.⁸⁷ British Retail Consortium called the exemption for companies employing less than 250 people "not logical, and will further confuse consumers with some smaller supermarkets having to charge and others being able to provide free polythene bags". They were concerned that franchise operations might be exempt, and that the charge could be applied differently to stores within the same group, which would be "confusing for customers and place some retailers at a competitive disadvantage based solely on their business model".⁸⁸ Campaign to Protect Rural England highlighted a rural dimension to the exemption for small businesses, which could potentially reduce the effectiveness of the charge in discouraging littering:

littering is greater and there are more smaller stores proportionally in rural communities. Even now, we are seeing plastic bags being found disproportionately more frequently on rural roads. The risk is that if you exclude smaller stores from a scheme, you would see that becoming a bigger problem in rural areas and not so much in urban⁸⁹

British Retail Consortium told us that small businesses would not be worse off under a mandatory charge if they were subject to lower reporting burdens, as was the case in Wales:

This is a nil cost to retailers, because if you look at the Welsh scheme for example, what the Welsh Government have done there is to say, "Okay, the charge applies to all, but the reporting restrictions, which could potentially

84 Q66

85 National Federation of Retail Newsagents ([BAG 012](#)), para 6

86 Association of Convenience Stores ([BAG 016](#)), para 7

87 Defra ([BAG 032](#)), para 11; Q61

88 British Retail Consortium ([BAG 028](#)), para 4.4.1

89 Q41; This analysis draws on the data from the Keep Britain Tidy survey '[How Clean is England?: The Local Environmental Quality Survey of England 2012/13](#)', p29

add a burden, are relaxed for smaller companies.” They have taken note of the potential business burden on smaller companies in the way the reporting restrictions apply to them. We are not seeing any of our members saying that they want this exemption for small stores.⁹⁰

Marks and Spencer favoured replicating the Welsh charging model, where only retailers with more than 10 employees would be required to report statistics and cost and revenue data for the scheme.⁹¹

40. The Government’s proposed exemption for small retailers is unnecessary, and risks adding undue complexity to the scheme, reducing its environmental impact and reduction in bag use. There is compelling evidence that small retailers want to be included in the mandatory scheme as a voluntary approach could be counter-productive. The Government should include small retailers in the scheme, but exempt those with 10 employees or fewer from detailed reporting requirements. As in Wales, all shops should be required to publicise in-store the proceeds and where the money raised is spent.

Proceeds and enforcement

41. The Climate Change Act 2008 enables the Government to require sellers of goods to charge for single-use plastic bags that they supply to their customers.⁹² Defra proposes that Trading Standards Officers (TSOs) would be responsible for enforcing the charge, as they are in Wales and will be in Scotland, because “TSOs are already responsible for enforcing packaging requirements in England, so adding plastic bag enforcement would slipstream in with this current work”.⁹³ The Government recognises that civil sanctions may be required, and is considering how they should be introduced.⁹⁴ We heard that in Wales “there have been no prosecutions, but there have been a number of trading standards warnings given, and a number of trading standards reports and inquiries into specific cases.”⁹⁵ Keep Wales Tidy told us that only six businesses have been found to be in breach of the charge, and that this has been seen as an indication of the scheme’s success.⁹⁶ For consumers to accept the charging scheme, public trust in it is vital so Trading Standards should undertake intelligence-based enforcement of the charge.

42. The Government expects that the charge will raise around £70 million for charity.⁹⁷ The Government’s consultation stated that it “will not collect the proceeds of this charge in England, which will stay with the organisations collecting them. We will encourage these organisations to donate the profits to good causes”.⁹⁸ The Government has no powers to

90 Q40

91 Marks and Spencer [submission to Defra consultation](#)

92 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 24

93 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, paras 67-68

94 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, paras 69-70

95 Q8

96 Keep Wales Tidy ([BAG 041](#))

97 Q78

98 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 11

force a retailer to give money from the bag charge to a particular organisation, but “expects that the retailers will act as they have done in the other countries of the UK and donate the proceeds to good causes”.⁹⁹ Wales told us that they have reserve powers for directing payments, but have opted for a voluntary arrangement on where the funds should go.¹⁰⁰ Keep Wales Tidy told us that they “support the voluntary agreement and would like to see the whereabouts of the proceeds continuously monitored and publicised.”¹⁰¹

43. *Whilst we support the use of funds for good causes, such as environmental charities, we are concerned about potential abuse of the scheme. The Government should set clear rules for transparent reporting and for retailers to publicise prominently in store where the funds are going. It should ensure tough sanctions exist to prevent retailers having a conflict of interest about which charities are supported and ideally shoppers should decide which local charity the funds go to, as already happens in some stores. If there is evidence of retailers abusing this approach, the Government should follow the example of the landfill tax and plastic bag tax in the Republic of Ireland by centrally collecting and allocating funds for environmental projects.*

44. The Climate Change Act 2008 enables the Government to require organisations to keep records relating to charges for single-use carrier bags, and to publish these. Administrative costs and VAT would be deducted from the money passed on to good causes. In Ireland, administration costs were relatively low, at around 3% of revenues, because reporting and collection was integrated into existing VAT reporting systems.¹⁰² Defra told us that it expected retailers’ administration costs to be “about £6 million” (over 6%), “leaving a VAT take of about £19 million”.¹⁰³

45. *Research shows that a majority in England (81%) is willing to pay a 5p charge if the money goes to charity.¹⁰⁴ This is in line with our conclusions in our 2011 report on Environmental Taxes, that taxpayers are significantly more likely to accept green taxes if they are clearly set up to support environmental aims rather than as a vehicle for raising money for the Treasury.¹⁰⁵ Under current proposals the Treasury intends to take VAT from the proceeds from the bag charge (just under 1p of the 5p), which would otherwise go to charity. The estimated £19 million raised in VAT should be spent on new environmental programmes and to cover the costs of monitoring the effectiveness of the scheme. This would help reinforce the wider environmental objectives of the charge and maintain public support.*

99 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 55

100 Q8

101 Keep Wales Tidy ([BAG 041](#))

102 Convery, F., McDonnell, S. Ferreira, S. (2007) [‘The most popular tax in Europe? Lessons from the Irish plastic bags levy’](#) Environmental Resource Econ 38:1-11

103 Q80

104 Poortinga, W, Whitmarsh, L. Suffolk, C. (2013) [‘The introduction of a single-use carrier bag charge in Wales: Attitude change and behavioural spillover effects’](#). Journal of Environmental Psychology 36: 240-247

105 [Budget 2011 and Environmental Taxes](#) HC878

Wider environmental benefits

46. Research suggests that a majority of people in England (54%) support the introduction of a charge. Dr Poortinga told us he believed that it will become more popular after its introduction because support for the carrier bag charge in Wales increased from 59% before it was implemented to 70% afterwards. He noted that similar positive attitudinal changes have been observed for other environmental and behavioural change policies.¹⁰⁶

47. Research suggests that a proportion of people consistently over-state their pro-environmental behaviours (a gap between stated intention and observed actions).¹⁰⁷ There is evidence that the charge could help close this gap. 10% of shoppers in Wales told researchers that they take new single-use bags from shops; observations showed that in reality around 15% do so. This divergence was considerably less than in Scotland (25% and 66%), which does not yet have a charge.

48. Keep Britain Tidy told us that a charge could help stimulate good environmental behaviour more generally on waste prevention and reuse.¹⁰⁸ In Wales, more people reported that the charge was an effective way to reduce waste and litter after the introduction of the scheme,¹⁰⁹ and research showed that the charge in Wales “may be a factor in increasing pro-environmental awareness and behaviours”.¹¹⁰ Professor Richard Thompson told us “I believe a considerable number of consumers are keen to do the right thing but are confused as to what the right thing is”,¹¹¹ which reinforces the need for the Government to ensure its approach is simple, easy to follow and consistent.

49. As we discussed in Part 1, the proposed charge could help reduce levels of littering. Economic psychology suggests that charging can lead some people to justify negative social behaviours if they feel they are paying for a service.¹¹² It is sensible not to directly link the proceeds of the charge to fund litter collection, as it might lead some to justify littering. However, giving bags a value should incentivise their reuse, and reduce the numbers disposed of thoughtlessly. ***More research is needed into how people respond to the charge including the impact on littering and recycling. The Government should ensure that retailers collect and submit data on bag reuse, and monitor how the charge affects wider behaviours to ensure the scheme has as significant an environmental impact as possible.***

106 Dr Wouter Poortinga ([BAG 001](#)), para 10

107 [MindSpace: Influencing behaviour through public policy](#) states “For example, one meta-analysis of pro-environmental behaviours reported that at least 80% of the factors influencing behaviour did not result from knowledge or awareness”. Kollmuss and Agyeman (2002) *Mind the Gap*. *Environmental Education Research* 8(3): 239-260

108 Keep Britain Tidy ([BAG 022](#)), para 9

109 Dr Wouter Poortinga ([BAG 001](#)), para 11

110 Welsh Government and Zero Waste Scotland (2013) ‘[Behaviour Study on the re-use of plastic bags](#)’, p9; In Wales 98% of people who re-use bags for life, and 88% of those that don’t, agree with the statement that they have “become more aware of the importance of recycling or re-use rather than throwing items away in the regular bin”, compared with around 70% of those in Scotland.

111 Professor Richard Thompson (further) ([BAG 044](#))

112 Gneezy and Rustichini (2000) ‘[A fine is a price](#)’ *Journal of Legal Studies*, vol. XXIX Chicago

3 Disposal and recycling of bags

50. Currently, over 8 billion carrier bags are used in England each year (para 4), and only a very small proportion are recycled, with most going to landfill or incineration.¹¹³ However, plastic bags are a small proportion of waste overall, making up less than 1% of the 28 million tonnes of household waste a year. In contrast, food waste is 7 million tonnes (25%) and packaging 5 million tonnes (18%).¹¹⁴ WRAP conclude “Given the low tonnage and the low degradation rate, the (non-litter) environmental impacts of actions related to plastic carrier bags are likely to be small, when compared to some other areas of waste and resource management (such as food waste prevention).”¹¹⁵

Proposed exemption for biodegradable bags

51. The Government has proposed an exemption for biodegradable bags, which would involve “ambitious standards”.¹¹⁶ It is “looking for UK industry to develop biodegradable plastic carrier bags that have low environmental impacts while still being useful to consumers”.¹¹⁷ Defra has set out that:

In an ideal world every single-use carrier that we use would have a number of functions and characteristics:

- It would break down in all environments (marine, terrestrial, composting plants and AD plants) at the end of its service life and at a rate of degradation that offsets the rate of accumulation.
- It would perform its function as a carrier bag well.
- When it breaks down it would degrade quickly into demonstrably harmless products.¹¹⁸

Based on current evidence, Defra believe that there is no bag that meets these requirements. The Minister told us:

At the moment I think it would be fair to say that I cannot see a product on the market that would meet the aspiration that we would have for that exemption. So I think this is something that we would see coming forward. We have made provision for that to happen, but we don’t see a product out there that meets those criteria.¹¹⁹

113 Environment Agency, ‘[Life cycle assessment of supermarket carrier bags: a review of the bags available in 2006](#)’ Report SC030148

114 WRAP ([BAG 031](#)), para 6

115 WRAP ([BAG 031](#)), para 5

116 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 45

117 Defra, [Single-Use Plastic Bag Charge for England: Call for Evidence](#), November 2013, para 40

118 Biodegradable Plastic Carrier Bags Solutions through Innovation’ Defra [research call](#)

119 Q68

52. Research by Loughborough University for Defra in 2010 concluded that there is currently no agreed standard for biodegradability.¹²⁰

The term biodegradable does not specify the extent, time-scale or conditions under which biodegradation has taken place. Compostable is more precisely defined. According to the European standard on compostable packaging materials, EN13432, a biodegradation level of at least 90% must be achieved in less than six months for a plastic to be described as compostable.¹²¹

There are however two main types of bag described in differing contexts as ‘biodegradable’:

- i) ‘Bioplastic’: often made from corn-starch, and often blended with conventional plastics.
- ii) ‘Oxo-degradable plastic’: largely made from naphtha, but with additives (usually metal salts) that, when exposed to ultra-violet light or dry heat and mechanical stress, break the plastic into small particles which may then be further degraded by micro-organisms.¹²²

53. We received a range of evidence relating to the proposed biodegradability exemption, which showed often opposing views about the extent to which particular materials might be safely recycled and about potential harm in the natural environment. The Oxo-biodegradable Plastics Association maintained that their product would meet the criteria for an ‘ideal bag’: “fit for purpose, can be reused, recycled, will safely degrade and biodegrade if not collected, will not generate methane in the landfill and will cost little or no more than the ordinary plastic bag.”¹²³ However, we received evidence from recyclers (paras 55–58) and an expert in how plastics degrade in the natural environment (paras 59–62) that contradicted that view.

54. Defra state that “standards are yet to be developed”¹²⁴ for the bag exemption. Barry Turner of PAFA described as “strange ... that this exemption is being proposed without us knowing quite what type of material they have in mind”.¹²⁵ David Newman of Polythene Industries told us that the exemption for biodegradable bags “came completely out of the blue. It was a complete surprise”.¹²⁶ Jessica Baker, of Chase Plastics and the British Plastics Federation Recycling Working Group told us that recycling groups only met with Government once before the policy was announced:

120 The process where the material breaks down and is colonised and metabolised by microbes

121 Loughborough University (2010) EV0422 [‘Assessing the Environmental Impacts of Oxo-degradable Plastics Across Their Life Cycle’](#) p1

122 Defra [Q and A](#)

123 Q108

124 Defra ([BAG 032](#)), para 22

125 Q47

126 Q88 [Mike Baxter]

Obviously we were quite surprised that, a week later, the carrier bag tax was announced and also the exemption for biodegradable was announced. I think we found that quite intriguing, because obviously Defra had given us the impression that it was the start of the debate, whereas, obviously, we felt then that, actually, decisions had probably already been taken. Although we did try and engage, up to that point we felt that we had been ignored.¹²⁷

Professor Richard Thompson, a Marine Biologist, told us:

I have acted as an adviser to Defra and the EU for a number of years. ... I was curious to understand the motivation behind the exemption. It was the biggest surprise of all within the proposals.¹²⁸

However, Michael Stephen of Oxo-biodegradable Plastics Association said that they had had more meetings with Defra:

We did have some meetings with officials at Defra—one meeting before and one meeting after the round table that Jessica Baker referred to. I, too, was rather surprised at how quickly the policy came out after the round table.¹²⁹

The Defra Secretary of State, Owen Patterson, told the Environment, Food and Rural Affairs Committee in October that he took some responsibility for the proposed exemption:

I am also very taken by the idea of a genuinely biodegradable bag ... You can partly blame me for this; I was really hoping that if we scoured the world we would find this technology.¹³⁰

The policy around the exemption for biodegradable bags appears rushed and taken before reviewing existing evidence or considering the concerns of all stakeholders.

55. We heard evidence about the best ‘end of life’ options for plastic bags, and also how different bags perform in the natural environment. It is clear from analysis done by the Environment Agency that different bag types require different processes at disposal (Figure 3).

127 Q87 [Jessica Baker]

128 Q89 [Professor Thompson]

129 Q90

130 Oral evidence taken before the Environment, Food and Rural Affairs Committee on [29 October 2013](#), Departmental Annual Report 2012-13 HC741 Departmental Annual Report Q105

Figure 3: End-of-life options for different bag types

Type of carrier bag	Landfill	Incineration	Mechanical recycling	Composting
Thin single-use High-density polyethylene (HDPE) plastic bag	✓	✓	✓	
HDPE bag with a prodegradant additive ('Oxo-biodegradable')	✓	✓		
Starch bag	✓	✓		✓
Paper bag	✓	✓	✓	✓
Low-density polyethylene (LDPE) bag—thin bag for life	✓	✓	✓	
Non-woven PP bag—Thicker bag for life	✓	✓	✓	
Cotton bag	✓	✓		

Source Environment Agency, 'Life cycle assessment of supermarket carrier bags: a review of the bags available in 2006' Table 3.2

56. We received extensive evidence from organisations involved in recycling plastics about the potential impact of dealing with biodegradable plastic bags. Recyclers were concerned that increasing the use of biodegradable plastics would threaten the viability of the UK recycling industry. Regain Polymers told us:

The danger that biodegradable plastic presents to existing markets is simple. Once it becomes recognised that degradable plastic is routinely present in the UK plastic waste stream, confidence in recycled plastic will evaporate and not only will we fail to find new markets for the plastics we so ardently wish to recycle but those markets that already exist will themselves disappear. Far from biodegradable plastic bags being given an exemption to the proposed carrier bag tax, the use of any biodegradable plastics should be discouraged.¹³¹

Similarly, British Polythene Industries stated that they were:

totally opposed to any exemptions for biodegradable bags, this would be environmental madness. Far from benefiting the environment, any exemption would inevitably lead to an increase in the use of carrier bags containing a degradable additive, these bags would—after use—enter and contaminate the plastic films waste stream. This contamination would cause huge damage to the UK plastic films recycling industry and inevitably lead to a reduction in the amount of waste plastic films recycled in the UK.¹³²

Industry Council for Research on Packaging and the Environment told us that “the proposed exemption for biodegradable bags will result in the closure of UK plastics reprocessing with consequent job losses.”¹³³

131 Regain polymers ([BAG 002](#), paras 4-5:

132 British Polythene Industries ([BAG 007](#))

133 INCPEN ([BAG 008](#))

57. Recyclers told us that they are concerned about two issues. First, that oxo-biodegradable materials would contaminate the waste stream because the additives that cause the plastic to degrade will remain in recycled products and lower the quality and durability of their products. Jessica Baker of Chase Plastics told us that recyclers “cannot have degradability built into long-life products, because it is just too dangerous”.¹³⁴ She stated “It will not take long, if there is any doubt—even a shred of doubt—about the ability of our reprocessed products to remain stable, before the market disappears.”¹³⁵ Oxo-biodegradable Plastics Association referred to a South African study that concluded that oxo-biodegradable plastic could be recycled without affecting the performance of the recycled plastic,¹³⁶ but we also received other evidence which reached the opposite conclusion.¹³⁷ Defra acknowledged that there are differing views on whether oxo-degradable products can be safely recycled.¹³⁸

58. The second concern was that starch-based ‘bioplastic’ bags would damage recycling machines. Mike Baxter, of British Polythene Industries,¹³⁹ told us that “if starch-based products get into our recycling machines they will stop. LDPE [Low-density polyethylene] recycles at 200°C; starch is at a 150°C. We know, because every so often it gets in.”¹⁴⁰

59. UK recycling of household plastic film, including thin-gauge carrier bags, is still in its infancy. Over recent years, many major supermarkets have introduced collection points at the front of stores for plastic film and used carrier bags: an estimated 60% of UK stores now have these facilities. The collected plastic film (including bags) is baled in the UK, then most is exported to China for reprocessing.¹⁴¹ Plasrecycle has recently built the first plant in the UK to reprocess carrier bags into a clean plastic granulate for reuse as new bags or black sacks. They believed that the promotion of degradable bags through the proposed exemption would be a “very bad idea since such bags, both bio-degradable and oxo-degradable cannot be separated from conventional non-degradable bags, so the whole stream will go to disposal rather than recycling”.¹⁴² Defra, who have commissioned research in this area, believed that:

the solutions to these issues raised by recyclers lie mainly in the fields of improved detection and separation technology, e.g. the use of physical indicators such as colours or fluorescence, or better control of materials aid physical separation.¹⁴³

134 Q145

135 Q103

136 Oxo-biodegradable Plastics Association ([BAG 026](#)), para 33; Roediger [report](#) (2012)

137 European Plastics Converters (EUPC) ([BAG 006](#)); OPA disagree with this- Oxo-biodegradable Plastics Association ([BAG 026](#)), para 34

138 Defra [Q and A](#)

139 BPI is “the largest manufacturer/recycler of polythene film and bags in Europe”—Q87

140 Q105

141 WRAP ([BAG 031](#)), para 24

142 Plasrecycle ([BAG 003](#))

143 Biodegradable Plastic Carrier Bags Solutions through Innovation’ Defra [research call](#), p27

Jessica Baker told us, however, that that she had asked a sorting machine manufacturer whether their infrared technology would be able to separate out oxo-degradable from conventional plastics:

The answer was no. They could separate out starch, but obviously it is on a throw-out basis. So you either keep the starch and throw away all the plastic, or you keep the plastic and throw away the starch. It is not economically viable and it is not practical.¹⁴⁴

It appears to us that Defra is trying to use innovation to justify a rushed and flawed policy proposal to allow an exemption for biodegradable bags.

60. We heard that currently the only accepted standard for biodegradability is compostability (paragraph 51), but bags meeting that standard will not degrade as quickly in the natural environment as in specialist composting plants. Waitrose told us that “biodegradable bags (paper/natural materials) are not designed to degrade in anaerobic landfill conditions and could release methane under such conditions”,¹⁴⁵ contributing to climate change. Professor Thompson told us:

to call something biodegradable ... we are talking about it degrading in industrial composting at 50° C, with specific conditions of pH and humidity after it has been pre-shredded ... Material that at the moment is called biodegradable will not biodegrade in the sense that I imagine most members of the public would expect it to, which is harmlessly and quickly in the natural environment. It is going to do so in a commercial composter.¹⁴⁶

61. Professor Thompson has examined how quickly plastic bags degrade in the marine environment. He found that compostable plastic disappeared after 16–24 weeks, but approximately 98% of other plastics (including oxo-biodegradable plastics) remained after 40 weeks, in part due to a lack of light reaching the bags under water.¹⁴⁷ Oxo-biodegradable Plastics Association pointed to other research that showed that oxo-biodegradable bags can degrade more quickly in laboratory tests.¹⁴⁸ We also heard that as the degradability rate of oxo-biodegradable bags is influenced by heat and light, they are likely to take longer to degrade in the UK than in warmer climates.¹⁴⁹

62. The Irish Government considered that “biodegradable bags still take a considerable time to degrade and while their use may be preferable in a final treatment situation, such bags will continue to form a visible nuisance where discarded as litter”.¹⁵⁰ Waitrose told us:

144 Q111

145 Waitrose ([BAG 027](#)), para 3.9

146 Q117

147 O'Brine, T. and Thompson, R. '[Degradation of plastic carrier bags in the marine environment](#)'. *Marine Pollution Bulletin*, 2010. 60(12): p. 2279-2283

148 Qq131-133

149 Additional evidence from Mr Newman ([BAG 039](#)), para 5.5.

150 [Irish Government](#) Biodegradable bags

The only benefit of a biodegradable bag therefore, is with regards to litter. However, existing types of bio (plastic) bags still take years to decompose. We need to be changing behaviour, not condoning the discarding of bags into the environment with the hope they will break down before they cause damage to marine life or unsightly litter.¹⁵¹

63. Plastic bags can cause harm to wildlife, particularly in the marine environment, and it is not clear that biodegradable bags significantly reduce that harm. The Marine Conservation Society highlighted a study of Green and Loggerhead Turtles which showed all types of bags degrading in their intestines insufficiently slowly to reduce morbidity.¹⁵² We also received evidence, notably from Professor Thompson, indicating that even small particles of degrading plastic may present significant marine health risks.¹⁵³ Defra told us “Marine microplastics have been shown to absorb pollutants from the marine environment and are sometimes ingested by marine organisms. This is a cause for concern although at the moment we are not able to assess this harm.”¹⁵⁴ The Defra Secretary of State told the Environment, Food and Rural Affairs Committee that “current [plastic bag] technologies ... in the marine environment would lead to real damage”.¹⁵⁵

64. *The Government should remove the proposed exemption for biodegradable bags. It presents risks to recyclers and might cause as much harm to the natural environment and wildlife as new or recycled bags.*

The need for a clear, consistent and coherent approach to waste

65. Axion Recycling suggested that waste management systems should not mix biodegradable materials with those that do not degrade.¹⁵⁶ David Newman explained how Italy had chosen to prioritise compostable bags, in order to support a food waste collection and composting system:

We decided in Italy that the most important element of our waste strategy was the organic waste stream. The organic waste stream is 30% to 40% of our waste stream. It is today 40% of all our recycling in Italy.

Therefore, it was critical to us that this waste stream is as uncontaminated as possible. That is why the perfect plastic bag for us in our country is a

151 Waitrose ([BAG 027](#)), para 3.11

152 Marine Conservation Society ([BAG 013](#))

153 Professor Thompson submitted evidence that states “It is unlikely that a material can be developed... that will also completely degrade into harmless constituents within a sufficiently rapid timescale (i.e. a time scale that would prevent the negative impacts on wildlife, aesthetics and economy) when the bag becomes litter in the environment” ([BAG 030](#)) para 2. He was also a joint author of an article in the journal Nature (**494** 169–171, 14 February 2013) titled ‘[Policy: Classify plastic waste as hazardous](#)’. In addition, the European Parliament published a ‘[Green Paper: On a European Strategy on Plastic Waste in the Environment](#)’ in March 2013 states (p6) “micro-plastics... may have a high potential for contaminating the food chain through predator-prey interaction”

154 Defra ([BAG 032](#)), para 18

155 Oral evidence taken before the Environment, Food and Rural Affairs Committee on [29 October 2013](#), Departmental Annual Report 2012-13 HC741 Departmental Annual Report Q105

156 Axion ([BAG 014](#)), p2

compostable plastic bag, because we can then use that to collect our organic waste in our households and send it to composting and to anaerobic digestion, therefore decontaminating the organic waste stream. That is the answer from the experience we come from. That is a strategic vision of the whole waste system that we have in [Italy].¹⁵⁷

Jessica Baker noted, however, that such an approach would not currently be appropriate in the UK:

Italy's situation is entirely different from that of this country. Our whole waste management legislation for the past 15 years has not been geared up to twice-a-week collections of food waste in a compostable bag. ... We have twice-weekly collections. The majority is now in a commingled collection. Unfortunately, that would mean that any compostable bag that was handed out in a supermarket would be a general-purpose bag. It would end up in the commingled waste stream and therefore would contaminate the whole of the domestic plastic household waste stream, and would not be able to be reprocessed.¹⁵⁸

66. As Local Councils are responsible for waste disposal, it would be difficult to introduce a national policy that fits with every local authority's approach. The Co-op have trialled the sale of compostable bags for people to use to carry shopping home but then reuse for local authority food waste collection and home composting, but the pilots are restricted to local authority areas with a compatible waste strategy:

As additional local authorities introduce food waste collection, low-cost accessible provision of caddy-liners in schemes such as this will only serve to improve resident engagement while minimising increased burdens on local authority budgets. The fact that we only sell the bags in areas where the local authority will accept them means that management of their suitability for anaerobic digestion is built in.¹⁵⁹

A 5p carrier bag charge would have little impact on these schemes. Compostable bags are expensive to produce and currently retail at a cost price of 6p, which is cheaper than the cost of buying a roll of bags for composting. As the price of these bags is higher than 5p an exemption from the charge is unnecessary.¹⁶⁰

67. There is a need for the Government to take a long-term approach to support the investment needed to meet recycling targets and ensure the financial sustainability of the sector. Jessica Baker of Chase Plastics told us how important recycling is for meeting the

157 Q104

158 Q105

159 Co-operative Group ([BAG 040](#), para 4.2).

160 Co-operative Group ([BAG 040](#)); Currently [Oldham Council subsidises compostable bags at 3p](#), but this only makes sense when the alternative is free, and continued subsidy is unlikely to be the best use of public funds. It would not be desirable to make a compostable bag cheaper than a conventional bag as it could lead people to thoughtlessly take this kind of bag because it is cheaper without intending to use its correct disposal. Guidance and possibly regulation around the correct disposal of these bags would be necessary in any case.

Government's "ambitious recycling targets for plastic", stating that recycling plastic bags "is going to be a means by which we could meet the new targets". The first plant in the UK to reprocess carrier bags and other post-consumer films back into plastic granulate for reuse in new bags has only recently opened, partly publicly-funded.

68. Defra's proposed exemption for biodegradable bags is risky and unnecessary. The decision to exempt biodegradable bags was rushed and taken without considering its coherence with wider strategies for reducing and managing waste, and the exemption could also undermine the reduction in bag use from the 5p charge. It is important that the Government gets the proposals for the carrier bag charge right, as it is one of the simplest and most effective ways of reducing resource use and helping people act in a way that has wider environmental benefits. The Government's waste management strategy needs to be clear, consistent and easy to understand in order to secure reduced carbon emissions, improved rates of recycling and avoid contamination of waste disposal streams. Gains in other areas could be far more important than can be generated by bags alone. We will return to these wider issues on waste in a subsequent inquiry.

Conclusions

1. The Government has multiple aims for the plastic bag charging policy, including reducing emissions, waste, and litter, but has not adequately determined their relative priority. Before proceeding it should have undertaken a structured appraisal of the evidence on the potential environmental gains associated with each objective and the extent to which the charge and type of bag would secure these gains, along with an assessment of their associated risks and wider impacts. It needs to ensure its analysis is robust and accurate. (Paragraph 15)
2. Given that the proposed English scheme would have more exemptions than the one in Wales, it is likely that the reduction in bag use would be lower than the 76% achieved in Wales. Without additional complexity from exemptions for small retailers and for biodegradable bags, it might achieve as large a reduction in bag use and littering. (Paragraph 20)
3. The policy around the exemption for biodegradable bags appears rushed and taken before reviewing existing evidence or considering the concerns of all stakeholders. (Paragraph 54)
4. It appears to us that Defra is trying to use innovation to justify a rushed and flawed policy proposal to allow an exemption for biodegradable bags. (Paragraph 59)
5. Defra's proposed exemption for biodegradable bags is risky and unnecessary. The decision to exempt biodegradable bags was rushed and taken without considering its coherence with wider strategies for reducing and managing waste, and the exemption could also undermine the reduction in bag use from the 5p charge. It is important that the Government gets the proposals for the carrier bag charge right, as it is one of the simplest and most effective ways of reducing resource use and helping people act in a way that has wider environmental benefits. The Government's waste management strategy needs to be clear, consistent and easy to understand in order to secure reduced carbon emissions, improved rates of recycling and avoid contamination of waste disposal streams. Gains in other areas could be far more important than can be generated by bags alone. (Paragraph 68)

Recommendations

6. Although there is evidence that higher charges can achieve greater impact, a charge set at 5p has been shown to be highly effective in Wales in substantially reducing use. Evidence from Ireland suggests that increasing the size of the charge, or having a credible threat to do so, is important for sustaining changed behaviours. The Government should implement a 5p charge for all single-use carrier bags, following the example of the scheme in Wales, but should review the level of the charge after two years to assess if an increase is necessary. (Paragraph 23)
7. Paper bags can have a greater emissions impact than plastic bags. Exempting paper bags from the charge, as the Government proposes, would weaken the message to reuse bags, diminish the impact of the charge and the likely reduction in the number of bags used and associated environmental benefits. The Government should therefore include paper bags in the charge. (Paragraph 27)
8. With the introduction of a charging scheme for single-use bags, the Government should be ready to introduce legislation to ensure that retailers sell 'bags for life' at an appropriate higher price than the charge for single-use bags, taking into account their greater emissions impact. The Government should set a minimum price for bags for life at a level which incentivises their reuse; perhaps a minimum of 10p for a thin and 20p for a thick bag for life that could subsequently be replaced for free if it breaks. The Government should ensure any additional proceeds of these charges also go to charity, with retailers allowed to recover the cost of such replacements. (Paragraph 36)
9. The Government's proposed exemption for small retailers is unnecessary, and risks adding undue complexity to the scheme, reducing its environmental impact and reduction in bag use. There is compelling evidence that small retailers want to be included in the mandatory scheme as a voluntary approach could be counter-productive. The Government should include small retailers in the scheme, but exempt those with 10 employees or fewer from detailed reporting requirements. As in Wales, all shops should be required to publicise in-store the proceeds and where the money raised is spent. (Paragraph 40)
10. Whilst we support the use of funds for good causes, such as environmental charities, we are concerned about potential abuse of the scheme. The Government should set clear rules for transparent reporting and for retailers to publicise prominently in store where the funds are going. It should ensure tough sanctions exist to prevent retailers having a conflict of interest about which charities are supported and ideally shoppers should decide which local charity the funds go to, as already happens in some stores. If there is evidence of retailers abusing this approach, the Government should follow the example of the landfill tax and plastic bag tax in the Republic of Ireland by centrally collecting and allocating funds for environmental projects. (Paragraph 43)
11. Under current proposals the Treasury intends to take VAT from the proceeds from the bag charge (just under 1p of the 5p), which would otherwise go to charity. The

estimated £19 million raised in VAT should be spent on new environmental programmes and to cover the costs of monitoring the effectiveness of the scheme. This would help reinforce the wider environmental objectives of the charge and maintain public support. (Paragraph 45)

12. More research is needed into how people respond to the charge including the impact on littering and recycling. The Government should ensure that retailers collect and submit data on bag reuse, and monitor how the charge affects wider behaviours to ensure the scheme has as significant an environmental impact as possible. (Paragraph 49)
13. The Government should remove the proposed exemption for biodegradable bags. It presents risks to recyclers and might cause as much harm to the natural environment and wildlife as new or recycled bags. (Paragraph 64)

Formal Minutes

Wednesday 29 January 2014

Members present:

Joan Walley, in the Chair

Peter Aldous
Martin Caton
Katy Clark
Zac Goldsmith

Mark Lazarowitz
Dr Matthew Offord
Mrs Caroline Spelman
Dr Alan Whitehead

* * *

Draft Report (*Plastic bags*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 68 read and agreed to.

Summary agreed to.

Resolved, That the Report be the Eleventh Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

Written evidence was ordered to be reported to the House.

[Adjourned till Wednesday 5 February 2014 at 2.00 pm]

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the Committee's inquiry page at www.parliament.uk/eacom

Wednesday 18 December 2013

Question number

Dr Wouter Poortinga, Reader in Environmental Psychology, Cardiff University, **Matthew Quinn**, Director for Environment, Welsh Government, and **Richard Swannell**, Director of Sustainable Food Systems, WRAP

[Q1-31](#)

Andrew Opie, Director of Food and Sustainability, British Retail Consortium, **Neil Sinden**, Policy Manager, Campaign to Protect Rural England, and **Barry Turner**, Chief Executive, Packaging and Films Association.

[Q32-48](#)

Dan Rogerson MP, Minister for Water, Forestry, Rural Affairs and Resource Management, Defra, **Laura Denison**, Team Leader, Carrier bag policy, Defra, **Clare Hawley**, Deputy Director, Waste Strategy and Management, Defra, and **Karen Lepper**, Deputy Director, Waste Strategy and Management, Defra.

[Q49-86](#)

Wednesday 8 January 2014

Jessica Baker, Chase Plastics, **Mike Baxter**, British Polythene Industries Ltd (BPI), **David Newman**, The Italian Association of Bioplastics and The Italian Composting Association, **Michael Stephen**, Oxo-biodegradable Plastics Association (OPA), and **Professor Richard Thompson**, Plymouth University.

[Q87-151](#)

Published written evidence

The following written evidence was received and can be viewed on the Committee's inquiry web page at www.parliament.uk/eacom. Inquiry numbers are generated by the evidence processing system and so may not be complete.

1	Dr Wouter Poortinga	BAG 0001
2	Regain Polymers Limited	BAG 0002
3	Plasrecycle Limited	BAG 0003
4	Natural Environment Research Council	BAG 0004
5	Closed Loop Recycling	BAG 0005
6	British Polythene Industries Plc	BAG 0007
7	Incpen	BAG 0008
8	Food Service Packaging Association	BAG 0009
9	Packaging And Films Association (Pafa)	BAG 0010
10	British Plastics Federation	BAG 0011
11	National Federation Of Retail Newsagents	BAG 0012
12	Marine Conservation Society	BAG 0013
13	Axion Recycling Ltd	BAG 0014
14	ACS (Association Of Convenience Stores)	BAG 0016
15	UK Travel Retail Forum	BAG 0017
16	European Plastics Converters Eupc	BAG 0018
17	Novamont; The Kyoto Club, The Italian Association of Bioplastics and The Italian Composting Association	BAG 0019 , BAG 0039
18	The British Association For Shooting And Conservation	BAG 0020
19	Centriforce Products	BAG 0021
20	Keep Britain Tidy	BAG 0022
21	Campaign To Protect Rural England (CPRE)	BAG 0023
22	Colin Farrant	BAG 0024
23	The Oxo-biodegradable Plastics Association	BAG 0026 , BAG0037
24	Waitrose	BAG 0027
25	British Retail Consortium	BAG 0028
26	Surfers Against Sewage	BAG 0029
27	Professor Richard Thompson	BAG 0030 , BAG 0044
28	Wrap	BAG 0031
29	Defra	BAG 0032 , BAG 0042 , BAG 0049
30	OPA	BAG 0034
31	European Bioplastics E.V	BAG 0035
32	Chase Plastics Ltd	BAG 0036
33	British Polythene Industries Plc	BAG 0038
34	The Co-operative Group	BAG 0040
35	Keep Wales Tidy	BAG 0041
36	Advanced Enzyme Science Limited	BAG 0045
37	Symphony Environmental Technologies	BAG 0046
38	Global Trading UK Limited	BAG 0048