



Environmental Audit Committee

Oral evidence: [Plastic bags](#), HC 861

Wednesday 8 January 2014

Ordered by the House of Commons to be published on 8 January 2014.

Written evidence from witnesses:

[British Polythene Industries Ltd](#)

[Oxo-Biodegradable Plastics Association](#)

[Oxo Biodegradable Plastics Association \(additional\)](#)

[Professor Richard Thompson](#)

[Novamont, The Kyoto Club, The Italian Association Of Bioplastics and The Italian Composting Association](#)

[Watch the meeting](#)

Members present: Joan Walley (Chair), Peter Aldous, Neil Carmichael, Martin Caton, Katy Clark, Zac Goldsmith, Mark Lazarowicz, Caroline Lucas, Caroline Nokes, Dr Matthew Offord, Mrs Caroline Spelman, Dr Alan Whitehead, Simon Wright

Questions 87-151

Witnesses: **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 Thompson**, Plymouth University, gave evidence.

Q87 Chair: First, may I apologise for the delay in commencing the session with our panellists? I thank each and every one of you for coming along to our second and final part of this brief inquiry into plastic bags. I wish everybody a happy new year.

We have quite a few questions to get through, a large panel and virtually a full turn-out of Committee members on this most important issue, so it would be really helpful if people who wish to catch my eye, including panellists, just make themselves known to me. I will do my best to keep everybody succinct and bring everybody in. We are not looking for long answers, but for direct answers.

Given that the Government has made the announcement it has made, I should like to start by gauging whether any of you had had discussions with Government about the

proposed exemption for biodegradable bags, and if so, briefly, what form that took. Who wants to start?

Jessica Baker: We have attended—well, I have, and colleagues in the reprocessing sector—the round table event about the search for a biodegradable bag. This was a week prior to the announcement, so at that point we felt it was a general discussion. We raised our concerns, but 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.

Other than that, we have responded to the Defra consultation and also to your Committee's consultation.

Mike Baxter: Chairman, good afternoon. I just wanted to say that we are the largest manufacturer/recycler of polythene film and bags in Europe, but we have no commercial interest in supermarket carrier bags whatsoever. We do not make them. We do not sell them. Similarly, we have no interest in the manufacture or sale of additives—biodegradable or stabilising additives.

In answer to your question, we have, since this announcement was made, as some Committee members will know, spent a great deal of time and effort lobbying and making our position clear about the damage we believe that the proposal to include biodegradable exemptions would cause to the UK recycling sector. I make that point because we do not have any axe to grind. We do not make or sell carrier bags. We do not make additives. We are recyclers. That is why we feel so passionately about this, with our thousands of employees whose positions could be threatened with this.

Q88 Chair: My question really was trying to get from you what advance notice or engagement you had with Government in terms of the proposals which were subsequently brought forward.

Mike Baxter: The proposal for a carrier bag tax, if you will excuse the expression, has been—we have been involved with it for 10 or 15 years, and our position has been broadly neutral. It is now broadly supportive.

Q89 Chair: But you didn't have any discussions with the Government about it.

Mike Baxter: It came completely out of the blue. It was a complete surprise.

David Newman: Madam Chair, I come from Italy, so it would be rather difficult for me to have had discussions with your Government. Of course, we have had a dialogue with the Italian Government and the European Union on this question for the last several years. I hope to be able to bring you that experience.

Professor Thompson: I have acted as an adviser to Defra and the EU for a number of years. They have not asked me specifically about this issue, but when I found I was going to be speaking to the Committee today I queried them because I was curious to understand the

motivation behind the exemption. It was the biggest surprise of all within the proposals. I was expecting to see something more along the lines of—

Q90 Chair: Have you shed any light on the reason for the exemption?

Professor Thompson: Not completely, no.

Michael Stephen: 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. The gist of our submission to the Government is this: the ideal policy should be one that reduces the number of bags in circulation; it should raise money for good causes without imposing a significant burden on the poorest households; and for the bags that remain after the reduction it should encourage retailers to supply the ideal bag.

The Minister, when he came before the Committee on the 18th, referred to that when he said that the policy should be that the bags that are used after the reduction “are better by being biodegradable, rather than simply single-use...bags”. We said to him that the ideal bag should be fit for purpose for the lifetime specified by the Government. It should be reusable for shopping and other purposes and made partly from recycled plastic. It should be recyclable if collected during its lifetime without the need for separate collection and, if not collected, it should safely biodegrade in the open environment. We said that it needs to be an oxo bag, not a bio-based bag, so it will not generate methane in landfill and will cost little or no more than the ordinary plastic bag. That was the gist of our submission to them. I don’t know how far they have taken it on board.

Q91 Chair: I will bring in Caroline in a minute. I don’t want any detail now, but will the Government’s call for research in respect of biodegradable and recycling technology for carrier bags achieve what they are looking for?

Jessica Baker: No.

Michael Stephen: No, it won’t.

Professor Thompson: I have concerns about it. I think industry is at the heart of the solution, but we need to be clear about what we are aspiring towards. How quickly do we want a plastic carrier bag to degrade in the natural environment in which we might find it? Is it acceptable to have it littering the streets for 18 months or two years, or does it need to go in four weeks? It needs to be clear to industry what the challenge is. If we are expecting industry to innovate, it needs to be clear what an acceptable situation would be from a public perspective concerning bags littering the environment. The concern I have is that you will simply switch use from one type of disposable to another, but there will not be the associated reduction in waste in the environment. It is quite a tall order that you are expecting.

Jessica Baker: I agree entirely. It is almost impossible to achieve what the Government are looking for. If we actually get a bag that degrades as they are requiring—i.e. very quickly and in all environments, open and closed—ipso facto it will not be reprocessible with normal waste stream, hence you will put all the reprocessing jobs at risk.

Q92 Caroline Lucas: Isn't the Government exemption that is being sought strange? In answer to an earlier question, Professor Thompson, you rather tantalisingly said that you hadn't completely got to the bottom of why the Government might be proposing such an exemption. I wonder whether I can tempt you to say a little more about the bit that you have got to the bottom of.

Professor Thompson: I agree wholeheartedly that it is important to embrace industry in the solutions for innovation. Industrial innovation lies absolutely at the heart of the solutions to managing the problems we have got—with the use of fossil oil, through single-use plastic items, into waste. Around 30% of our possible oil reserves are going in that single-use manner. Within about a year they are being disposed of, and they are ending up in the waste stream or as litter. Industry is at the heart of that, and plastic bags are part of the waste problem, albeit quite a small part. It is important that industry is involved, but industry can play a much bigger role in innovation on some of the other materials that are contributing to waste than they can on plastic bags. The answer clearly lies in material reduction and a movement towards reusable material. If you reduce the amount that is being used, you reduce the reliance on fossil reserves and you reduce the amount of waste, but you also ensure that bags are recyclable when they come to the end of their life, which makes them a renewable source.

Q93 Caroline Lucas: That all makes sense, but the question was on the rationale for seeking the exemption.

Professor Thompson: I can only assume that it is about embracing industry in resolving the problem, but I am concerned.

Q94 Chair: That doesn't quite answer Caroline Lucas's question on the Government's motives.

Professor Thompson: I cannot speak for them.

Michael Stephen: It is what the Minister said on 18 December. He wants to reduce the number, but the bags that are left should be better bags, by being biodegradable, so that they do not lie or float around in the environment for decades.

Jessica Baker: That is pure speculation. It is possible that, after many years, the plastic bag tax is now inevitable, yet somehow maybe the Government feel that they still do not want to make the British public pay for their carrier bag, so they are looking for an exemption solution. We in the processing sector would argue for an entirely environmental exemption. If you have to have a bag, the choice should be for a reprocessed plastic bag with a majority of recycled materials.

David Newman: It could be that the Government have seen what has happened elsewhere. In Italy, the exemption was not through a tax but through a ban on non-compostable, non-biodegradable bags. France has also just introduced the same policy, and Spain is introducing it in the lead-up to 2020. So it could well be that the Government have intelligently looked at what is happening in the rest of Europe and thought that some of those schemes are worth imitating.

Michael Stephen: I don't think that is the case. I don't think that Spain, France or Italy are doing that, but that is perhaps for another question.

Q95 Chair: Finally, when the Minister came before our Committee just before Christmas he said that he doesn't think there is a product currently on the market that would meet the proposed exemption for biodegradable bags. Professor Thompson, you just mentioned the importance of dealing with such things as part of a collaboration with all those involved so that we can find a solution. Has there been sufficient connectivity with the BIS Department on the cross-cutting aspects of this? It has been taken forward by Defra, but in the conversations you have had, do you feel that Defra is working with BIS to see how there could be a solution involving the industry? Are they looking at the closed manufacturing process to which you just referred?

Professor Thompson: I cannot answer that question. The discussions I have had with Defra are very modest indeed, so I don't know to what extent they are doing that.

Michael Stephen: The tender put out by Defra to industry asked for help to make the ideal bag, the characteristics of which I gave to the Committee a little while ago. I was rather surprised, as the project was headed "project for a biodegradable plastic carrier bag," that the tender appears to have been awarded to two companies with no experience in biodegradability, although they do have experience in recycling, when at least one other consortium that bid had recycling, manufacturing and biodegradable experience.

Q96 Chair: But not involving the actual industries themselves, which are already manufacturing.

Michael Stephen: Yes, these were industrial companies that put bids up to Defra saying, "We British companies can help you to make the ideal bag." I will have to enquire into who the assessors were for that tender and get to the bottom of why it was awarded to those companies with no experience in the relevant subject, but maybe that is another matter.

Mike Baxter: With respect to my colleagues on the panel, we are all missing the obvious. We are talking about what industry can do to develop the ideal carrier bag. We are talking about innovation. This is a hypothesis that, if you don't mind my saying so, is irrelevant. There are not any supermarket carrier bags manufactured in the United Kingdom. There are not any supermarket carrier bags manufactured virtually anywhere in Europe. All of the plant and equipment that used to employ—and I know, because my business had to make more than 1,000 people redundant in the late 1990s, when all supermarket carrier bag manufacturing transferred to the Pacific rim, where it is today. So any innovation comes from there.

Chair: Okay. We may come to that in a moment. I turn briefly to Caroline Spelman.

Q97 Mrs Spelman: In the absence of a nirvana bag, what do you all think about the decision to exempt paper bags? What are the consequences likely to be? I ask because I picked up that Professor Thompson essentially said that the message that the exemption of biodegradable bags gives is that littering is okay as long as products are biodegradable. Given that in Scotland that exemption does not exist, do you have a view on that?

Professor Thompson: May I start? I don't feel that there should be any exemptions. I feel that what we are trying to achieve here is a reduction in the usage of single-use bags, be they conventional plastic, degradable plastic or paper. That is what we are trying to achieve. And if I look at the drivers that come from Defra, from other documentation within the UK and from Europe, they are about reducing the use of single-use bags, about material reduction, whether that is oil and gas or cutting down trees to make paper bags, and the associated waste generation, to reduce littering in the environment, and—if we can do so all at the same time—to reduce carbon emissions. So, those seem to be the drivers and any exemption that we consider has to address all, or a good number, of those drivers; otherwise, we are in serious danger that we will move from one disposable item that has those problems to another disposable item that has a range of related or possibly different problems. So the exemption must be considered in relation to the levy.

Mike Baxter: Again, we don't make carrier bags, paper or polythene, so perhaps I can give you some neutral figures here. If your overall concern is global warming and climate change, paper bags are a disaster. These are United Nations figures and I can give them to the Chair—

Q98 Chair: Please don't read them out now because—

Mike Baxter: Okay. Just to say, water consumption, acid rainfall—

Q99 Chair: You can provide us with that and we can have—

Mike Baxter: Fine. I just wanted to give information there.

Michael Stephen: Paper bags would be a disaster, and there is a life cycle assessment done by Intertek that shows that. Actually, the same life cycle assessment shows that plastic bags, and in particular oxo bags, are the best alternative. Now, the Government are not—I think—thinking that they can reverse history and get all the manufacture of plastic bags back from China and into the United Kingdom, because such bags are a low-cost product and do not require the sophisticated technology that we have in this country. So those bags, whatever they are made of, are going to continue to be made out there, in China or wherever.

The only question that the Government have is what the Minister said—can we use this opportunity to make the bags that remain, after our reduction, better, by making them biodegradable? The answer is yes, and that was what the tender was for, to British industry to say, “Help us to make the ideal bag,” and we can. There is an ideal bag that can be degradable and is also, with respect to the other members of the panel, reprocessible.

Jessica Baker: No, it is not.

Michael Stephen: We will come to that as a separate issue.

Q100 Chair: You disagree with that, Miss Baker.

Professor Thompson: May I ask a very brief question in relation to that? You mentioned the bag that remains. It is not clear to me why that would need to have an exemption. It is clear that we will need some bags at the end of the day, whatever form they may take, but what we are discussing here is an exemption.

Michael Stephen: Well, the bags that remain, the Government do not want them to be the old-fashioned, conventional bags that lie around in the environment for decades. They want them to be bags that will degrade and biodegrade if they get into the sea or the environment, and at the same time they want them to be reprocessable. That is the challenge that they threw out to industry, which we would be very happy to respond to, but they chose somebody who knows nothing about the subject.

Q101 Chair: Okay. You will each want to respond—I will go through and you will each have an opportunity to give a one-sentence answer to that.

Mike Baxter: Just as another point of information, supermarket carrier bags in the environment, as unsightly as they might be, do not hang around in the environment for decades. All of you will know this; you will have carrier bags at home. Even if you have got them in a drawer, after about six months they start to break up.

David Newman: Madam Chair, I do not want to respond to Mr Stephen. What I would like to say is that we have to look at this whole question beyond plastic bags. We have to look at the strategy that the Government want to impose on this country for waste management. Plastic bags are a part of that. When you are ready, I would like to talk to that question.

Professor Thompson: I am endorsing that point entirely. It is absolutely right that we start with this discussion about plastic bags, but I believe quite strongly that over the next 10 years, we will face similar questions relating to waste in general. Getting the message right and clear to the public is very important as a starting point with plastic bags. That is why I am really pleased to see this attention being focused on it.

Chair: One sentence, Ms Baker.

Jessica Baker: If you give an exemption to whatever kind of bag, it won't be the bag that remains; it will be the bag that there will be a lot of, because if it is free, it will be used.

Michael Stephen: It won't be free.

Jessica Baker: It's not exempt then.

Q102 Neil Carmichael: According to a Defra report, "the best means of disposal for oxo-degradable plastics is incineration, or if incineration is not available, then landfill is the next best option." Does that not mean that these bags are effectively going to prevent recycling generally?

Michael Stephen: No.

Jessica Baker: Yes.

Michael Stephen: Madam Chair, will we have a specific session on recyclability, or is this the time to address recyclability?

Neil Carmichael: Could you answer my question? Mr Stephen, you have answered. Professor Thompson?

Professor Thompson: I am not a recycler, but all the evidence that I have seen points towards problems associated with recycling.

David Newman: We have done a study over the past two years in Italy that shows that traditional polyethylene can be recycled with compostable plastics, up to 10% of the volume of that polyethylene, without making any damage to polyethylene recycling.

Mike Baxter: It is difficult enough to run a recycling business in the United Kingdom today. Starch-based or biodegradable just makes the day when the UK recycling industry finally disappears into the distance that bit closer. We recycle less film in the UK today than we did 10 years ago, and it is continuing to go that way. All this will do is mean that the factories that we run, and my colleague Jessica Baker runs, and the thousands of other people who are out there who rely on their job—we are not talking about where there is a carrier bag floating around; we are talking about jobs in the UK from UK manufacturing—will be threatened by this proposal. And why? What's the point? Anyone else is going to say, "Oh, it might be a nice idea. It might close a few factories on the way." It's crazy.

Q103 Neil Carmichael: I think the yeses have won that round.

Jessica Baker: May I just say something in a slightly calmer way, just for your interest? My company has been recycling plastic for 50 years. My customers buy recycled plastic for two reasons only: it is cheaper than virgin polymer, and if it is fit for their application. Many of the applications that reprocessed plastic goes into are long-life. They may be pipe tree guards, plank wood—you name it. Some of these products are meant to last for 30 years. 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. It will be like an urban myth.

Q104 Dr Whitehead: Having, so to speak, fought our way out of plastic bags, perhaps we could concentrate for a moment on the idea of a nirvana bag, assuming that there is going to be an exemption. What I take from the discussion so far is that it appears to be a little unclear whether, between you, you have in fact been consulted about these arrangements, and whether the arrangements had come on stream before some fairly intensive discussions about the various ins and outs of degradability and compostability; the plastics recycling hierarchy; the extent to which various plastics enter at different stages into the plastic hierarchy; and whether the whole thing ends up making bollards and chairs, or whether you can come out at different levels of the plastic hierarchy—all those sorts of issues. What would a nirvana bag look like under those circumstances? What would it be required to do, and to what extent is one just pursuing a chimera thinking there might be a nirvana bag?

Chair: Mr Newman.

David Newman: Thank you, Madam Chair, for this hot potato. Before we can answer that question we have to look at what is strategically the most important element of your waste strategy. 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 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 our country, rather than a vision of whether it should be 5p or 10p.

Q105 Dr Whitehead: If a compostable bag got into the collection of general plastics, would that mean that the recycling hierarchy would collapse?

Michael Stephen: Yes.

David Newman: Have you not asked yourself what happens to the contrary? We as composters treat 5 million tonnes of organic waste but we have to take out of that 100,000 tonnes a year of plastic waste that was improperly given to us. That is far more than the plastic film waste even recycled in our country. The question we ask ourselves is, “Yes, it may do, but the contamination coming into the main waste stream, which is the organic waste stream, is already far, far higher than that could possibly be.”

The other answer to your question is, if the compostable bag is a bag for dual use it has a certain destination. That destination is to collect your organic waste and throw it on to the compost collection scheme. There is going to be little or no littering or little or no recycling into other waste streams with that bag. In fact, we had no experience of that whatsoever, and the study that was done by the National Packaging Consortium in Italy over the past two years has demonstrated that. A copy of that has been circulated to you today.

Jessica Baker: All I would say with that is that 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. That might have been a nice idea but that is not what we have. 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.

Mike Baxter: Just quickly: if starch-based products get into our recycling machines they will stop. LDPE recycles at 200°C; starch is at a 150°C. We know, because every so often it gets in. To answer your question whether we were consulted about the suggestion to go down a biodegradable exemption route: no, it was a bolt from the blue, even though we are the largest.

Do I have the nirvana? Probably. I don’t want to throw any spanners in any works, but it is to build on what Jessica said earlier. I know carrier bags are out there in the environment and I know we don’t like to see them, but there are bigger issues. Carrier bags are 0.2 of 1% of all waste in a household waste site.

Everybody wants a solution. I understand politically why you need an exemption. We have not had time to put our suggestion in writing because this has all happened so quickly. Our suggestion is to come up with a supermarket carrier bag that contains 50% recycled post-

use polythene waste from any source within the EU. That would do a number of things. One, it would give an additional market for recycled polythene film waste that does not exist at the moment. Two, it might just encourage manufacturing back to mainland Europe—I'm not saying that's definite. Three, there might then be more of an incentive for the retailers to use their waste and recycle it into their own carrier bags. Only one retailer does this at the moment in any size.

Q106 Chair: Would you like to name that retailer?

Mike Baxter: It's Sainsbury's.

Q107 Dr Whitehead: Forgive me for cutting in, but what appears to be emerging is a straightforward contradiction between compostability, recyclability and biodegradability.

Michael Stephen: Yes.

Q108 Dr Whitehead: That appears therefore to lead to the conclusion that there isn't a nirvana bag which provides for all these solutions.

Professor Thompson: Well, I'm not sure.

Michael Stephen: The nirvana bag, which I call the ideal bag, is the bag—shall I repeat those six items?—that is 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.

Q109 Dr Whitehead: That is the oxo bag you were just describing?

Michael Stephen: I am talking about a mixed oxo and recycled bag, yes, because if a recycled bag gets out into the environment it will not degrade, so it needs to have oxo inside it as well. The life cycle assessments by Intertek that I referred to have shown that oxo has the best environmental credentials of all the materials tested when you include the litter metric.

An exemption would not reduce the number of bags, because people would just switch to the exempt bag—as has already been said. We would have no objection to that, because we do not think that carrier bags should any longer be made from old-fashioned conventional plastic, but the Government have decided that that's not the way they want to go. If the Government wish to reduce the number, we suggest that the 5p charge should be levied for an oxo/recycled content bag so it can be recycled, it will be used with recycle and it will degrade if it gets into the environment; and a 10p charge for a bag made from the old-fashioned conventional plastic, which we should not be using any longer for making carrier bags.

Q110 Dr Whitehead: You described a bag that breaks down under certain circumstances but still does not appear to fulfil all the requirements of recyclability.

Michael Stephen: Well, can we deal with recycling, because this is a huge issue? I have quite a lot to say about recycling.

Chair: When Dr Whitehead's question is answered, though.

Q111 Dr Whitehead: Briefly, because I realise we have a lot to get through. There are, for example, techniques related to commingling that a number of waste plants use in terms of optical reading of colour. One of the reasons why a number of local authority bags are bright orange is because they go down the hopper and an optical reader says: "Ah, it's an orange bag," and sends it left and everything else goes right. Are such solutions possible? I am trying to explore whether the answer to the Government's requirement is suitable.

Jessica Baker: In order to help meet the Government's new and very ambitious recycling targets for plastic, WRAP did a lot of work on household recycling of plastic—namely carrier bags, ironically. This is going to be a means by which we could meet the new targets. They commissioned a report for polythene film out of the domestic waste stream and using near-infrared optical sorters. Before I went to the round table, I contacted the manufacturer that they used and asked them the question directly: would their infrared technology 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.

David Newman: The nirvana plastic bag is the one you don't see and you don't use. The best plastic bag is the one that you don't use. Our experience in Italy has been that the market for reusable bags, which I think are called long-life bags in England, has increased. People are going to the shops with a thick bag made of plastics and recycled plastics and they are using those for months and months on end. In Italy, the sale of plastic bags in Co-op supermarkets, which is the biggest retailer in Italy, has gone to zero in one year. The sale of compostable bags has only compensated that by less than half. The best plastic bag is the one you eliminate.

Professor Thompson: To me, the nirvana bag needs to match whatever your main drivers are. The clearest message that I can see coming through is reduction in use. It is about a reusable bag that can incorporate recycled material and be readily recycled at the end of its lifetime. In that sense, it is about simplifying the recycling stream and not over-complicating it. You see a lot of materials that are labelled recyclable in theory, if they have their own separate stream. We are looking to reduce the diversity of materials and we are discussing that in line with the recyclers to ensure that we are coming up with a nirvana bag that has the maximum potential to be used over and over again and to be recycled into new material as effectively as possible, when it comes to the end of its life. That recycling will reduce the plastics going into the environment as litter and into the waste stream—that is, into landfill and into incineration—and it will reduce the reliance on fossil oil and gas for production. That is the nirvana.

Jessica Baker: Absolutely.

Michael Stephen: The Italians were right to want to ban conventional plastic for carrier bags and to make them biodegradable, but they chose the wrong technology. They chose bio-based plastic, rather than oxo. On bio-based, I am absolutely at one with the recyclers on the panel. Bio-based will be very bad news for British plastic recyclers and oxo would not. The Committee has received a lot of evidence from people who have expertise in

recycling, but they are not experts in recycling oxo-biodegradable plastics. We asked an expert whether there was any foundation for the fears that you heard in the evidence and that you are hearing from people today. Quite apart from the fact that they often confuse the bio-based plastic with the oxo plastic—I think we are all agreed that bio-based plastic is no good for recycling, so let us concentrate on the oxo for a minute—

David Newman: I have an objection to that.

Q112 Chair: We will come to your objection in a minute.

Michael Stephen: We asked Roediger Agencies—a laboratory in South Africa, which is a recognised specialist in recycling—to write a report. It wrote its report in 2012 and a copy has been given to the Committee. After very extensive testing, that report said: “We are able to confirm that plastic products made with oxo-biodegradable technology may be recycled without any significant detriment to the newly formed recycled product.” That report was re-validated after the EuPC report on recycling had been sent to Roediger. They said that the Austrian EuPC report made it clear that compostable plastics cannot be safely recycled. They also said: “We have no reason to change our 2012 opinion, and we consider that plastic products made with oxo-biodegradable technology may be recycled together with conventional oil-based polymers.” Therefore, there is a nirvana bag. If Defra will let British industry prove how to make it, it can be done.

Chair: Still in response to Dr Whitehead’s question, both Mr Newman and Ms Baker wish to—

David Newman: The objection to what Mr Stephen said is very simple. If we are talking about recycling, the biggest recycling stream in this country is the organic waste recycling scheme. Compostable bags are totally compatible with that recycling process. We have also shown through a two-year study, which you will have in your e-mail inbox, that up to a certain percentage of compostable plastics do not deteriorate in traditional mechanic recycling.

Chair: Okay.

Q113 Zac Goldsmith: I want to take Mr Stephen up on one issue. When you were originally asked to design your nirvana bag, you described it as a combo of oxo and recycled, but even putting aside the issues relating to recycling and whether or not Jessica Baker is correct about that, presumably that does not address the issues that most agitate the public, which are the visible effects of plastic bags: the littering, the contamination of oceans and so on. Your nirvana bag may be suitable, if Jessica Baker is wrong, for recycling.

Michael Stephen: Yes.

Q114 Zac Goldsmith: But it would not address the main reason why so many people are agitated about this issue. On which basis, I am interested in how you can describe that as a nirvana bag.

Michael Stephen: Yes. On the recycling issue, you can take the specialist, Dr Roediger’s report, or you can take Jessica Baker, who is not an expert—

Jessica Baker: There are 40 reproprocessors in the UK, all of whom agree with us.

Chair: One at a time, please.

Michael Stephen: Not one of whom is an expert in recycling oxo-biodegradable plastic. None of them have produced any scientific evidence to support their proposition that oxo would be damaging to British recycling.

Q115 Chair: Ms Baker, I do not think that the *Hansard* transcript can see your face. Do you wish to have the right to reply to that?

Jessica Baker: Yes, because it is entirely misleading. Basically, I am also here to represent the British Plastics Federation Recycling Group. We have forty members. I canvassed them before this meeting to ask the melt reproprocessors: the people who take plastic waste and turn it back into a product that has to have integrity, as I described earlier. Not one of them responded without expressing enormous fear. I had about 15 very fast responses, saying, “It would be disastrous to include oxy-degradable, just because of the doubt and the inability to know how much was in the waste stream and how much it would render the product not fit for purpose.”

Michael Stephen: I am sorry, this is not a scientific response. Read the scientific response and you will see that this lady is wrong.

Q116 Chair: Okay. You have made that point. For my purposes, we have Mr Goldsmith’s question still outstanding. We have got Dr Whitehead’s questions, and then Caroline Nokes.

Michael Stephen: Mr Goldsmith’s question, okay. The ideal bag—the nirvana bag—has obviously got to be fit for purpose. You do not want it degrading and falling apart before you have got the goods to your home. So the Government has to specify a period during which it is fit for purpose. After that, it will start to degrade and biodegrade rapidly, under the specification that the Government will give to industry.

If the bag gets out into the open environment, yes, during its useful life you will see it blowing about in the street and you will see it floating about in the ocean, but it will degrade and disappear so much more quickly than the conventional bag would. We are not saying that it will go immediately—otherwise, it would not have any fitness for purpose—but it will go much quicker than the conventional bag.

Zac Goldsmith: I am sorry, I was listening to you and then suddenly gesticulated to the Chair very rudely. Shall I move on?

Chair: No, because we are still on Dr Whitehead’s questions.

Zac Goldsmith: I will come back to you on this point. Sorry.

Mike Baxter: I would like to respond formally, because you have hit on one of the key issues. You have got Jessica Baker saying that she represents the 18 recyclers in the British Plastics Federation Recycling Group. That is about 40% of the recycling sector in the UK—we are 50%. We have got 90% of the UK recycling sector saying: “He’s wrong. His business, which sells oxo-degradables, is wrong.” I think, with our 40 years’ experience, we

should at least give some credence to the people in the UK who are running recycling operations and actually know what they are doing, as opposed to one paper from a South African university.

Q117 Dr Whitehead: This is a question and a statement. Do you think, on the basis of not just our discussion now but the wider question of the response to the Government's suggestion that they would like a bag to be biodegradable, but they haven't worked out what a biodegradable bag might be—

Michael Stephen: That was the purpose of the tender.

Dr Whitehead: Yes. I want to take a quick test on that. Would you say that that is likely to be very difficult to achieve?

Michael Stephen: No.

David Newman: I think these standards are already there. If we were to base our analysis on the standards which have been done by the European Union over the last 10 to 15 years, we have already answered the question. There is only one standard which says that something is biodegradable, and that is the compostable standard.

Professor Thompson: But that is not a standard that will actually meet the objectives that we are seeking in terms of reducing waste in the environment and the natural habitat, because to call something biodegradable, even from that perspective, 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.

David Newman: And in decomposting, too.

Professor Thompson: That would apply to a compostable material. We are not talking about things that have dropped indiscriminately into the environment as litter. 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. If Defra is looking for an exemption, we will need to define what that exemption is. It will need to go way beyond the current definition of degradable in industrial composting.

Michael Stephen: Composting is really a red herring for the purposes of this Committee because bio-based plastics, marketed as compostable, are tested according to a standard that has been referred to—13432—to biodegrade in the special conditions found in industrial composting, not in the open environment. So they don't address the litter problem. Secondly, they cannot be made into compost, funnily enough. They are called compostable but that very standard requires them to convert into CO₂ gas within 180 days. So that contributes to global warming. It does nothing for the soil. They are useful as garbage sacks for transporting organic material to a composting plant, but oxo bags have been trialled and tested for that purpose as well and are perfectly satisfactory.

David Newman: That is not true

Michael Stephen: Well, it is true and I have the reports.

Chair: Dr Whitehead.

Dr Whitehead: I think we have got as much clarity as we can.

Chair: So I will move on to Caroline Spelman.

Q118 Mrs Spelman: My questions are principally directed at David Newman. We are very grateful to you for coming from Italy to share your experience with us. After all, you are ahead of the game here. You are actually doing this in a particular way. We are keen to learn lessons from Italy's experience. In your evidence to us you said that there were some issues around ensuring that the bags meet the biodegradability standard. There was some evidence of people exploiting a legislative loophole. Could you explain what that was? Also, a little bit has come off already: the proliferation of plastic bags that claim to be biodegradable but maybe are not. Could you share with us a little bit of your experience in this area?

David Newman: How long have I got?

Mrs Spelman: Well, not too long if possible.

David Newman: When the idea of the law was first introduced in 2007, the law simply said we should study how we could reduce the contamination of CO₂ emissions, littering from plastic bags and introduce biodegradable bags. Very little happened for a few years. In 2011 the law was finally introduced saying that there was a ban on all plastic bags under a certain thickness. Let us be clear. In Italy we have not banned all plastic bags at all. We have only banned the single-use throwaway supermarket carrier bags under a certain thickness. The exemptions from those are thicker bags with recycled plastics in them or bags of that thickness and below from biodegradable plastics. What the law did not define in 2011 was what is biodegradable. So people like Mr Stephen and many others entered the market very forcefully and said, "Ours is biodegradable."

Michael Stephen: Which it is.

David Newman: In March 2012 the Government realised what was going on and introduced the law to say that biodegradable is a standard which is internationally recognised. There is no other standard to internationally recognised biodegradability at present than the 13432 compostable standard. Therefore from March 2012 that standard had been applied in Italy. What then happened was that it had to go into the European Union for the six-month standby period for review and objections were raised by, above all, Holland and Great Britain on free trade under the packaging directive. So it has taken until November 2013 for those objections to be overcome and for those standards to apply. So we really only have the experience of the last two months of the law being fully enforced.

Q119 Mrs Spelman: That leads me on to an interesting question. In their evidence to this Committee, Defra states that the banning of single-use or lightweight carrier bags would be illegal. So has your experience been that that is not correct after a six-month review period and that the Commission will allow you to do that?

David Newman: The Commission has had 180 days, which was extended for another 60 days, within which to reply and it chose not to reply. The reply from the Commission was

Mr Potočník's statement in October: we have to study this at European level and introduce European legislation

Q120 Mrs Spelman: So you are not going to be required to derogate?

David Newman: No, Italian law stands.

Michael Stephen: The European Commission's position is that what the Italians are trying to do is illegal under current European law. What European law will be next year or the year after is another matter. At the moment, what they are trying to do is illegal. I don't mind what they are trying to do, because they are trying to ban conventional plastic carrier bags. What I do mind is that they have chosen the wrong technology and there are standards for oxo-biodegradable. There is an American standard, an ISO standard and a British standard, so it is quite wrong to say that there are no standards. The standard that this gentleman is referring to, 13432, is not a standard for biodegradability; it is a standard for compostability; that is biodegradation under the special conditions found in industrial composting.

Q121 Mrs Spelman: Could I just point out from the evidence we have just been given, only two member states take the view that a ban on lightweight carrier bags would be illegal—only two out of 28. If Commissioner Potočník chose not to write back, how does that support your assertion that the Commission regards this as illegal? If it is regarded as illegal, where is the evidence?

David Newman: We would have had a recall. I don't know what it is called in Italian—I have lived in Italy all my life—an infraction procedure.

Michael Stephen: The evidence is that the Commission has taken court proceedings against Italy. They have launched infringement proceedings, which are still ongoing.

Jessica Baker: Just quickly on Europe—as Mr Stephen is very keen about what European feelings are towards this matter—in the draft report dated 17 December, the European Parliament is actually looking to ban oxo-biodegradable bags. So that would be a bit of a weird thing if we were about to give them an exemption and the rest of Europe is looking at banning them because they do not think that they are at all environmentally friendly.

Michael Stephen: That is only an initiative proposed, strangely enough, by an Italian MEP, Mr Prodi. In response to that, my association has written to the President of the European Parliament—I have not got a reply yet—saying: “Paragraph 5” of Mr Prodi's motion “is defamatory of our members and their products, and is an unjustified attack on a whole industry which employs very many people.” My association's letter goes on to say: “Members of the Parliament should not be allowed to use their parliamentary protection from legal action to commit defamation, and it is for that reason that we are bringing this to your attention as President” of the European Parliament.

Chair: Okay. Can we press on now?

Q122 Mark Lazarowicz: Can we have clarity on what is happening as far as the Commission is concerned? Mr Stephen says that the Commission is bringing in infringement

proceedings against Italy. Mr Newman, I think, implied that it was not. What is Mr Newman's response?

David Newman: Let me clarify. When the law was first introduced on 1 January 2011, there was no specification about what biodegradability really means; there was just a ban on a certain type of thickness of bag. The Commission did open an infraction procedure for that law. The Italians then responded to that in March 2012 by defining what compostability was and asking for that infraction procedure to be reviewed. That took them six months plus the 60 days, which finished on 13 September. There were 60 days to 13 November and the Commission has not taken any further action.

Chair: We must move on.

Q123 Zac Goldsmith: I was going to ask, what are the environmental impacts of biodegradable bags as compared with non-biodegradable bags? The difficulty with that is that there is no agreement as to whether a biodegradable bag is biodegradable. Perhaps standard 13432, which Mr Newman has cited as the only accepted standard, could be used as your benchmark.

Michael Stephen: It is not the only accepted standard.

Zac Goldsmith: I will come to that in a moment. Maybe Mr Newman can kick off on that.

David Newman: Can I ask for clarification? What do you mean by environmental impact? Where do you want me to go?

Zac Goldsmith: Broad environmental impacts. I am not purely interested in carbon footprints, but broader environmental impacts in terms of the legacy for the green environment, the countryside, and so on.

David Newman: What we have seen since the introduction of the law in 2011, I have the statistics here, is that overall—

Chair: Would you provide those in writing rather than read through them now, because of the time?

David Newman: I am not going to read through them now. What we have seen from 2011 to the end of 2013 is an overall dramatic drop in the amount of plastic bags being sold, with an increase in the amount of compostable plastic bags and an increase in the amount of oxo-degradable plastic bags showing themselves to be biodegrading—pretending to be biodegrading. We have seen a dramatic drop in the sale of traditional polyethylene plastic bags and a dramatic drop in the contamination of the organic waste stream going to anaerobic digestion and composting plants, because compostable plastics have substituted for traditional plastics in the collection schemes. We have also seen—though I do not have any statistics to measure this yet because it is too early—a reduction in littering because of the overall fall in the amount of plastic bags on the market.

Q124 Zac Goldsmith: On littering, how much of a factor was that? My understanding of the motivation behind the move in Italy to phase out the plastic bag was that littering seemed to be the central issue. It was about tourism more than anything. Is that right?

David Newman: Yes, there are three central issues. The original central issue was the carbon footprint. That was the 2006-07 *raison d'être* behind the law. Then the second strategic issue was: "How do we connect reducing plastic bags with improving the efficiency of our organic waste collection schemes?" because they were growing very rapidly. The third strategic issue was: "How do we prevent littering, especially marine littering?" Studies by the Italian institute for the environment showed that 73% of all the marine littering along the coastline of the Adriatic was plastic bags. So that became a third strategic issue: "How do we reduce that?"

Q125 Zac Goldsmith: May I ask you about the issue of microplastics, which is a big concern. People mistake the breakdown of plastic bags into tiny, sometimes microscopic, particles as their disappearance from the environment. Obviously they are still there and still find their way into the food chain. Does this issue of microplastics apply to biodegradable bags—the 13432 bags as you describe them, a term that I have never heard before, I am afraid? Presumably it does.

David Newman: Professor Thompson would probably be the best person to ask, because I am not a technician. But there is a fundamental difference in the chemical process between biodegradation—which means basically that it is eaten by bacteria and becomes, as Mr Stephen said, CO₂, mulch—and a fragmentation process, where it can break up into tiny little pieces that remain in the environment, which is what oxo-degradation is.

Q126 Zac Goldsmith: May I ask Professor Thompson and then Michael Stephen the same question about this issue of microplastics?

Professor Thompson: The concern you have articulated is the same one that I share. I do not believe we really have sufficient evidence about the degradation of any of these materials in the natural environment. We have studies on their compostability in a commercial composter at 50°C, but those are not conditions that will be met in the natural environment. The few studies that we have suggest that degradation is going to be relatively slow. There certainly haven't been studies in the deep sea. What we found from our own studies is that these bags get fouled by marine organisms relatively rapidly in the seas, which, if ultraviolet light is a catalyst—as it is for some of the oxo bags—will mean it is greatly reduced. We found that the amount of light reaching the surface of the bag was reduced by 70% or 80% relatively quickly in the sea, so that is going to slow down the rates of degradation. I am very concerned about some ultimately ending up as fragments.

Zac Goldsmith: We are not talking about—

Professor Thompson: No, I am talking about any bag that we put in the sea will become fouled relatively quickly and if ultraviolet light is important in terms of the breakdown of that material, then the sea is going to reduce that anyway—because it is going to be attenuated by the water—but the fouling of marine organisms is going to reduce that further. So the deeper the item is—and we know that carrier bags are present in the deep sea, they are buried in sediments and present at the sea surface—so the rates of degradation are

likely to be considerably slower. We have not got a complete picture of evidence, but I am certainly very concerned that, if we were to adopt something that we were considering was biodegradable, it was genuinely biodegradable into carbon dioxide and water, could be assimilated by micro-organisms and marine life relatively rapidly, and we were absolutely confident that it was not fragmenting into microplastic fragments.

Q127 Zac Goldsmith: And there is nothing to your mind yet that would fit that criterion?

David Newman: There is nothing that would fit that criterion that I would be confident would.

Q128 Zac Goldsmith: Would you include in that the oxo?

David Newman: Yes, I would.

Michael Stephen: There is something to my mind that would fit the criterion.

Q129 Zac Goldsmith: Let me guess. Is it an oxo?

Michael Stephen: It is—absolutely right. Will you read the report by the Swedish university of 2011, by Professor Jakubowicz and his colleagues, that took an oxo-biodegradable product and degraded it by 91% in two years? He is saying that the oxo-biodegradable product will degrade and biodegrade completely. You will never get the remaining 9% because that is used by the bugs to build their cell wall. A figure of 91% means complete biodegradation in 24 months. At the end of the abiotic degradation process you do not have fragments of plastic.

Q130 Zac Goldsmith: And that is under normal environmental conditions: marine environment, countryside environment?

Michael Stephen: Absolutely, on land or sea, though not designed for compost.

Q131 Zac Goldsmith: What I am struggling with is that this ought to be an issue that is relatively black and white. They either biodegrade or they don't. It is not a mystery. How can we have such discrepancy of views on this?

Michael Stephen: Because there are so many commercial interests that they are not prepared to accept the scientific evidence.

Chair: I think both Professor Thompson and Mike Baxter want to come in on your question, Zac.

Michael Stephen: I haven't finished answering.

Zac Goldsmith: If you could briefly answer.

Michael Stephen: The answer is that because we are not dealing with fragments of plastic—we are dealing with fragments of something that used to be a plastic and is now biodegradable—their performance in the sea is totally different from the fragments of conventional plastic that Professor Thompson finds when he does his research.

Professor Thompson: I have looked at the study you referred to. The problem that I have with it is that the bags that were subjected to those tests in soil and compost were all preconditioned. They were preconditioned by heating; they were pre-oxidised at temperatures between 50°C and 75°C. So it is fine to say that something might break down after it has been cooked for a while.

Michael Stephen: No, you have to do that in order to get a laboratory test, because an oxo is designed—

Professor Thompson: I want to test that they work in the environment.

Michael Stephen: The reason is that an oxo is not designed to start degrading immediately; a hydro is.

Chair: We have four more questions to get through and we need to get there by 4 o'clock. We need to be very disciplined in the answers to Committee Members.

Q132 Zac Goldsmith: May I just make one point? It seems brash to make the claims that you have, Michael, about oxo if there have not been long-term trials in the natural environment and conditions where they are likely to be found. If what Professor Thompson is saying is correct about the conditions at the trials you cited earlier, that does not tell us anything about how oxo would relate in the real world.

Michael Stephen: What the professor is doing—and he is not a professor of polymer science as far as I know.

Professor Thompson: I'm a marine biologist.

Chair: Order. Can I just say that there are obviously disagreements in respect of the witnesses' replies to the questions from the Committee. In view of the time that we have got left between now and when we will have a vote in the House of Commons, after which it will be difficult to get a quorum together, and given that we have four more questions, if any of you have objections to what has been said, please put them in writing to the Committee. I think that is the way to deal with this, rather than take up the rest of the time with internal disagreements on the witness panel. I would like Zac Goldsmith to complete his questions and then we will move on to Mr Carmichael.

Q133 Zac Goldsmith: I just have one last question, which relates to bioplastic bags which, on the whole, are made from starch plant material. I am wondering if there were a rapid uptake of bioplastics, would that have the same sort of impact we have seen in biofuels, in terms of displacing food crops and potentially raising the price of food? Is that an issue, do you think?

David Newman: It is a very common question and something that the whole bioplastics industry is concerned about, to the extent that today the latest technology that is being implemented in the north of Sardinia, where a €500 million plant is being built out of the ashes of an old chemical plant, will use thistles as the feedstock. They are what we call cardi in Italian—a type of thistle. That has revitalised the whole area of very marginal agriculture that was dying. You have the paradox there of being the contrary to what one's preoccupations were. Having said that, starch has been for centuries an internationally traded

product that is for sale and has been used for many purposes throughout the chemical industry for decades and centuries.

Professor Thompson: There is a fundamental difference. You used the example of biofuels. The difference is that at the end of its life, the piece of plastic is not burned in the same way as the fuel is in a car or an aeroplane. You have got a renewable resource here, and at the end of its life you recycle it. The idea of the biofuel is to make the fuel source more sustainable, so you are not relying on a fossil source. But a plastic item can be recycled at the end of its lifetime. It is a slightly different scenario from a biofuel, which, of course, requires land to grow the crops to make the plastic. Now, the amount in plastic bags might be quite trivial, but I don't see it as the main direction of travel in terms of resolving the problems of the sustainable use of resources. It is far better to use the end-of-life material and reduce the plastic going into the waste stream than to rely on a crop.

Michael Stephen: I must disagree with the professor. The bio-based plastic is not going to be recycled. It is going to be put into a composting plant and turned into CO₂ within 180 days.

Professor Thompson: That wasn't actually what I said.

Q134 Neil Carmichael: I am looking forward to this weekend's shopping expedition, if only to do some research. Regain Polymers said, "confidence in recycled plastic will evaporate and" it will "fail to find new markets for the plastics" if they have oxo-biodegradables in. PlasRecycle noted that it would be a "very bad idea since such bags both bio-degradable and oxo-degradable cannot be separated from conventional non degradable bags". Those are two respected organisations. Can we take that as properly evidence-based?

Michael Stephen: No.

Jessica Baker: Yes, absolutely.

Michael Stephen: I will tell you why.

Neil Carmichael: I just want yes or no answers.

Michael Stephen: I have read all the evidence, and some of them are confusing bio with oxo.

Q135 Neil Carmichael: No is one word, and that is the number of words that I want.

Michael Stephen: Well, no.

Q136 Neil Carmichael: So we have got no, yes, yes.

David Newman: I am not going to answer the question.

Q137 Neil Carmichael: We have got three out of five saying yes.

Michael Stephen: This is not a democratic issue.

Q138 Neil Carmichael: I am simply trying to calibrate where we are on this argument. We have heard a load of counter-arguments and I want to know the scale and the depth of the quality of the evidence.

Michael Stephen: We have both read that evidence. Some of it is confusing.

Chair: Mr Carmichael must get on with his questioning.

Q139 Neil Carmichael: I am asking the questions, and I want to have the opportunity to do so. For those of you who said yes, I suppose that there is one other question that needs to be asked, which is whether it is worth considering some sort of additive system to recycled material to deal with anything that might be contaminated.

Jessica Baker: I will let Mike deal with that.

Mike Baxter: I can answer that for you exactly. We would need to put an additive in. It is very interesting that Mr Stephen was saying a moment ago how absolutely certain he was that the oxo-degradable product does degrade. In that case, it is there in the film, so when we get film back to our recycling plant it is there. I think we would all agree with that; Mr Stephen would probably agree with that.

Michael Stephen: Yes.

Mike Baxter: So when the recycling process takes place, this is what we do. Here is some waste. That is what it looks like; I thought I would help you conceptualise it. In there could well be a carrier bag containing degradable product. We recycle that and it comes out looking like a pellet, and in the pellet could be a degradable additive. In the recycling process we just shred it, melt it and turn it back into pellet. It does not make the degradable additive disappear; it is still there. It is there when we make damp-proof membrane coursing, which has a very long shelf life. Can you imagine the liability for our company if in 20 years' time the damp-proof membrane course that we put down on the bricks starts degrading? Before Mr Stephen says that it needs oxygen, with damp-proof membrane both edges are exposed to oxygen. We have a big risk here. So, what's the way round it? Mr Stephen will tell us, no doubt—I'm helping him out here—that there are neutralising agents which can be put in. We think that they are antioxidants. There's also a lot of work being done at the moment on things called compatibilisers, and this is to help recyclers like us mix polythene.

Okay, so let's assume that we are going to do this and put this material in—we think about 2%. Cost: about £2,000 a tonne. So that's going to add £40 a tonne. Right. UK industry: 280,000 tonnes. Who is going to pay that £11 million?

Q140 Neil Carmichael: That is a good question and a good point to end on. Does anyone have a quick observation about that?

Michael Stephen: Yes. You have just listened to a scare story. Would you prefer to deal with the scientific evidence that has been placed before the Committee that says that these people have just given you evidence that is not correct? They are not backed up by a shred of scientific evidence.

Jessica Baker: It is vital it is understood—we do the practical job. If there is any doubt about the integrity of our recycled product, it will not be purchased. We will not meet our targets. It is quite simple—this is black and white. I am sorry, but it is.

Michael Stephen: There is no doubt—

Professor Thompson: What we are discussing here is the merit for an exemption. I am struggling to find that merit. What we have gone on to do, in our search for some evidence of a merit, is to look for retrospective fixers that will solve the problem if this material gets into the waste stream. This discussion is about the merit of an exemption.

Chair: This discussion is now going to move on to Caroline Nokes and Peter Aldous, and we will complete it by 4 o'clock, when a vote will be called.

Q141 Caroline Nokes: Thank you, Mr Baxter, for bringing along all of the film and plastic. What I wanted to understand was what the problem is already with the risk of contamination getting into your processes. I think we heard from Mr Newman that there could be a 10% tolerance of contamination.

Mike Baxter: No. With respect, it does not work like that. This is supermarket waste—the main source—which is a combination of stretch film and shrink film: the stuff that gets in the supermarkets that the product comes in. When you go down to a supermarket at the moment, as I am sure all of us do, you will see big bins outside the front of the supermarket, where it says, “Put your carrier bags in here.” At the moment, none of the big supermarkets in the UK has a biodegradable additive in their carrier bags, but if an exemption came in, it would be reasonable to assume, because the oxo-degradable system is so much cheaper—

Q142 Caroline Nokes: So there would be the risk of a mix.

Mike Baxter: Yes.

Q143 Caroline Nokes: But at the moment there is no risk of contamination whatsoever.

Mike Baxter: Correct.

Q144 Caroline Nokes: What about recycled plastic products other than film that might come out of the recycling process?

Mike Baxter: Film is the big issue, because generally speaking you will only put film back into film. So if you are recycling, say, washing-up liquid bottles, then those will go back into a rigid product. But the film recycling sector, which is what Jessica represents—and we do—takes film and recycles film. You put film back into film.

Jessica Baker: I would just add that we do do that, but obviously I have a lot of colleagues on the BPFRG and the rigid sector, who are not represented today, have asked me to make it very clear that they do take film element out of the waste stream. They have exactly the same problems—in fact probably more so, because a lot of the rigid, reprocessed applications are long-life products. Again, we are looking at the wood-based product replacements.

Q145 Caroline Nokes: Can I just confirm? The rigid recyclers would send film off to Mr Baxter rather than deal with it in their process if it were to come in via their waste stream.

Jessica Baker: No. Let us take something very simple which is rigid to rigid: bottle recycling. If, for example, the exemption gained ground, our fear for the rigid sector is that biodegradable or oxo-biodegradable would become the thing of choice. And if it was to get into the bottle sector, that would be the end of the bottle recycling industry in the UK, which is the big success story of the waste management system so far. However, other people take film and make it into board plank and so on, and they have stressed strongly to me that there cannot be the doubt. They cannot have degradability built into long-life products, because it is just too dangerous.

Q146 Caroline Nokes: May I just clarify? Mr Baxter has brought along some of his pellets. Presumably you would not know now whether there was any level of biodegradable material in those.

Jessica Baker: You would get it back very quickly from your customers.

Q147 Caroline Nokes: What scientific testing has been done to establish what level of contamination there is already?

Jessica Baker: What you have to understand about the recycling industry in general is that the science of it is the practical doing of it. In other words, everything is fit for purpose. If you send it to your customer and they cannot run it or use it, they will tell you that and you will have to tweak the mix, or whatever.

Q148 Caroline Nokes: But if you were to send it to your customer and there were to be no problem, you would not know?

Jessica Baker: No, because they would use it and they would not be sending it back to you so it is fine.

Mike Baxter: With respect, this is too theoretical a question. At the moment, when we sell products, when Jessica sells pellet to other film manufacturers, we say, “We guarantee that that is a prime material, that that is a black material”—or a clear material—“and that it is fit for purpose within our terms of reference.” The issue of biodegradability contaminating the waste stream does not come into it, because there are so very few UK retailers—none of the big retailers, the big six or big eight—currently use a biodegradable carrier bag. So the question is purely academic. What we are saying is, based on what the oxo-biodegradable people are saying, it does cause degradation. We know what degradation does. We know the effect that it will have. We do not need to go down the theoretical route. The theoretical science is—

Q149 Chair: The professor wants to say something.

Professor Thompson: I am curious whether any of the panel have got an answer as to why none of the big eight use these materials. Some of them used to and I am curious to know why none of them do.

Mike Baxter: I can answer that privately, sir, but with five minutes to go, that would cause a big row with Mr Stephen.

Chair: We actually have three minutes left. You can have one sentence.

Michael Stephen: Recycling is a hugely important issue. Read Dr Roediger's report. He knows all about damp-proof course. He knows all about the issues that these gentlemen have been mentioning. Read his report and don't rely on scare stories.

Q150 Peter Aldous: Thirty seconds each on the job impacts and the economic impact of the Government's proposals. I would be interested in what Mr Newman says from an Italian point of view. So, 30 seconds each, starting with Mr Stephen.

Michael Stephen: Get behind the British oxo-biodegradable industry. You have at least two companies here. They get no support from the British Government; it is about time they did.

Jessica Baker: Quite simply, if the exemption goes ahead, it would probably jeopardise not only my own company—because I would no longer be able to sell my products with certainty—and if the general BPFRG is anything to go by, 40 other companies would suffer the same fate. You will be losing jobs, not gaining them. Only the additive people would actually gain.

Professor Thompson: I think there are other areas in waste management where British companies could add greater weight in terms of innovation.

David Newman: I think there is a fabulous opportunity for British industry here to be a producer of compostable plastics—compostable polymers. We have created thousands of jobs in Italy and I think you could do that here in England. You can cut the council tax burden by sending less organic waste to landfill and to incineration, and less plastics which you cannot compost to landfill and incineration. You can provide tax revenue to the Treasury through VAT on sales of compostable bags and you can reduce the volumes of food waste going to landfill and incineration if you adopt a strategy like we have adopted in Italy.

Mike Baxter: The cost of starch-based products would suggest to me that that is highly unlikely. As I have said previously, the only way in which there is a chance of increasing UK employment rates through the recycling sector will be to give an exemption for carrier bags containing at least 50% recycled products. That is the only way. If an exemption is given for biodegradable bags—the oxo-degradable system—that will not create a single British job. It will destroy British recycling jobs. We know.

Chair: There is probably one minute of extra time after all that, if anybody wants to come back.

Q151 Caroline Lucas: On a completely different matter—others have said this as well—plastic bags are important, but not the only environmental problem or the biggest problem. What really interests me is how we use a campaign around plastic bags to stimulate and catalyse greater behaviour change among the public. Is there any evidence that you are aware of of what will do that—whether in Italy or anywhere else where this has happened—which has been enough to stimulate a bigger chain reaction of actions? To bring it back to the focus

of this particular inquiry, if we have all found it confusing to understand why this is or is not being exempted, do you think there is a risk that, in terms of any public information campaign, it could muddy the waters for that?

David Newman: I used to work for Greenpeace. I have been in this for a long time. The public awareness campaigns are the last thing you do.

Caroline Lucas: But it relates, presumably. Of course it is the last thing you do, but if you have a clearer message, it is going to be clearer to do it.

Chair: Order. On that point, as you can hear, the Division bell has now gone. It has been a lively session. I thank you for your attendance. If you wish to comment on the last question from Caroline Lucas, please put it in writing to the Committee. Thank you each for your attendance today.