

**Environment Committee**

**9 July 2014**

**Transcript Item 6: Household Food Waste in London**

**Murad Qureshi AM (Deputy Chair):** We now come to our main item of business, household food waste in London. We have got a number of guests for this item; can I ask you to introduce yourselves.

**Stephen Didsbury (Head of Waste and Recycling Services, LB Bexley):** I am Stephen Didsbury, I am the Head of Waste for the London Borough of Bexley and I am a chartered waste manager.

**Mark Griffin (Head of Waste Strategy, LB Hackney):** I am Mark Griffin, Head of Environment and Waste Strategy at the London Borough of Hackney.

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):** I am Will Stewart, Principal Development Manager here at the GLA in strategic projects and property with oversight for the Mayor's industrial land in east London.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** I am Wayne Hubbard, Chief Operating Officer of the London Waste and Recycling Board (LWARB).

**Linda Crichton (Head of Collections and Quality, Waste and Resources Action Programme):** Linda Crichton, I head up the waste and resource management programme at Waste and Resources Action Programme (WRAP), which encompasses our work on recycling.

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** Charlotte Morton, I am Chief Executive of the Anaerobic Digestion and Biogas Association. We represent the anaerobic digestion industry.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** I am Marco Ricci and I am a senior expert at the Italian Composting and Biogas Association, Italy.

**Murad Qureshi AM (Deputy Chair):** Thank you for all coming along for this item and giving us your expert perspectives. We are going to start with Marco giving us a presentation on food waste management in Europe. I think that will give us some insights into what is being done in the rest of Europe.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** First of all, ladies and gentlemen, thank you very much for inviting me here and giving me the opportunity to talk

to you. I will go directly into the first topic, which is an outlook on food waste management in Europe.

I represent Italy's largest industrial sector regarding the recycling of municipal solid waste. We are actually recycling more than 40 per cent of the municipal solid waste which is separately collected in Italy, so representing, like in the UK, a network of composting plants and our other digestion plants.

What is the status of food waste collection or biowaste collection in Europe? Countries can be divided roughly according to how established the separate collection schemes are. For example, one country which, since 2012, was completely established was Germany. Germany completely revised their national law so nowadays in Germany there is a lot going on about separate collection schemes for biowaste; since there is a national obligation for extending separate collection schemes for all municipalities, both smaller and larger ones.

We have other countries where the scheme is still in the implementation phase and I take the example of Italy, where you can see the country is basically divided into two parts. At the regional level, we have regions where the system is completely established, and other regions where the scheme is still in the starting or implementation phase. Then there are countries somehow lagging behind because they are missing basic infrastructure like recycling plants or composting or anaerobic digestion (AD) plants. A lot of things are now going on in Eastern European countries, basically to do with the fact that they are relying on European investment and funds to build up the basic infrastructure; both for food waste collection and recycling, and also for the correct disposal of municipal solid waste.

The current state of the biowaste management can be found very easily, looking at the Eurostat data. Those countries which started before, and typically they are central European countries like Germany and Austria, are those which have the largest amount of biowaste which is separately collected and recycled for composting. Although I would like to point out that when we look at these figures, we must be careful in understanding what percentage of this amount is garden waste and what percentage is food waste; because from country to country even the definition of biowaste changes.

Coming to this important point for assessing the effectiveness of different schemes, I would like you to be aware of the fact that there are basically three different schemes that can be found in Europe for collecting biowaste. One is the Belgian/Netherlands scheme which is mainly separately collecting those kinds of waste streams.

The German biowaste, or Biomass Action Plan (BAP) which can be found mainly in Germany and Austria is a scheme which is collecting commingled food waste and the green or yard waste. Then we have a third type of scheme which is tackling food waste specifically; and normally it includes also the most critical part of food waste, all of the cooked stuff like meat, fish and so on.

I would like to go into detail about four nations. This was an investigation done by a colleague and it focussed on the capture rates of food and garden waste, compared to the amount of population which is effectively involved in separate collection schemes. When we make this comparison, it comes out

that some schemes have interesting performances, specifically for food waste collection. These schemes are mainly to be found in Italy, in Catalonia and in some parts of the UK also. What happens in metropolitan areas or large cities? You will see in the second presentation that I am going to talk specifically about Milan, and together with the colleagues of the Milan waste management company authority we did a survey on selected large metropolitan areas. Focussing on the results for the year 2012, as you can see, separate collection of biowaste is part of many European municipalities and the results are remarkably different.

I am using the slide just to tell you that there are basically three different ways to collect food waste around Europe. I took one system which is from Bristol in the UK, and which is, to my knowledge, one of the first cities in UK offering food waste collection at the curb. They have applied what I would call a Mediterranean scheme in the sense that it is the same way of collecting food as you can find in Catalonia, in Italy and in some Eastern European countries. For instance, with smaller brown bins for collecting waste at semi-detached houses and with kitchen caddies which are delivered to each household to make the food separation inside the kitchen as easy as possible.

A second approach, you find around Europe mainly in southern European countries, are bring schemes, and Barcelona is an example where such schemes are used. Barcelona started separate collection in the 2010 and, as you can see from the pictures, the brown bins are very large, and food waste and unfortunately all other kinds of stuff are thrown into them. The first scheme is the typical central European bio bin scheme, so each household, especially for the garden, is equipped with a bio bin where we can collect co-mingled food and garden waste.

I will get back to the outcomes of these schemes when talking about Milan, but just to have some key numbers. The differences between the three schemes is that the road container scheme is normally critical in assuring quality of separate collection, which means that the recycling phase is becoming very critical. There is high contamination of the biowaste collected, just to give you a number, in Barcelona it is around 15 per cent. So what you get to the composting plant from 100 kilograms of biowaste, 15 per cent are non-compostable materials.

The German or the central European approach is somehow ineffective in collecting a valuable part of food waste, which is the cooked part of it. It is very often collected inside the residual waste bin because the collection frequencies are based on alternate weeks; one week I am collecting food waste, or biowaste, and the second week I am collecting residual waste.

A lesson to be learned when looking at the different collection schemes around Europe is that, intensive source separation schemes focussing on food waste only, get higher capture rates of food waste itself; compared to the biowaste schemes which are collecting very often large amounts of garden waste and low amounts of food waste.

The other point is that if we are focussing on quality, door to door collections like the one we are seeing in Munich or Bristol, those are schemes which allow us to check the quality at the curb and road container schemes are critical from that point of view.

A final element we would like to bring to your attention, and I don't have the time to go into detail, is that since one of the arguments that you are addressing in your briefing paper is the argument of economical sustainability of these kinds of waste management schemes, one point that comes up from another of these schemes around Europe is that savings can be achieved by revising the collection frequencies of residual waste and being effective in collecting food waste. This can be done, just to give you again a spot information, if you look at different schemes around Europe. I have deliberately not included the UK, because we have people sitting at this table who are much more expert about the UK than I, and will just give you the situation in central Europe. We normally have an alternate collection of food waste and residual waste and the outcome is that the concentration of organic waste inside residual waste is still high, which means that you are not able to reduce the collection frequencies of residual waste as strongly as you wish.

Intensive collection schemes for food waste which are applied in Mediterranean countries, and in a lot of schemes also in UK, are more effective in tackling food waste; which means that the amount of biodegradable waste which is to be found in residual waste is remarkably low. We are talking about 12 to 16 per cent, which means that this waste, we will call it residual waste or dry waste, is uncritical; so we can drop collection frequencies remarkably and dropping down collection frequencies for residual waste results in a saving.

I hope that I was able to give you a very short overview of what is going on in Europe and what kind of schemes you can find.

**Murad Qureshi AM (Deputy Chair):** Thank you, Marco, for the first presentation. Just on the back of that, we will have a few questions on the European context. You showed the variation in Europe. To what extent is that being determined by, I don't know, EU legislation or national priorities?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** I would say in the older countries that started before, like Germany and Austria, European legislation was not in place at that time, so it didn't act as a driver. In other countries, like the Mediterranean countries, European legislation had somehow to steer the system to a separate collection, even if there is actually a lack in European legislation clearly saying that Member States have to do separate collection. Therefore it depends very strongly on how the legislation is interpreted at regional and national level. Actually, European legislation is giving drivers to divert biowaste from disposal, so from landfilling to something else, and this something else may be either separate collection or recycling; however this debate has been ongoing for about ten years.

My personal orientation also representing the composting and biogas association is that it should be diverted from disposal according to the waste hierarchy being recycled. However, even pre-treatment, by means of mechanical biological treatment (MBT) or incineration, is a way to fulfil the landfill directive indications.

**Murad Qureshi AM (Deputy Chair):** Okay. The other thing which was obvious from the map,

certainly, as there seems to be variations within countries.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Yes.

**Murad Qureshi AM (Deputy Chair):** In Italy it seems there is a difference between the north and south; and in Spain, Catalonians seem to be doing a lot more than the rest of Spain. To what extent is that cultural, or is that regional?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** it is cultural really. I have seen this scheme running also in Tunisia. It is a question of regional authorities. The point is if we compare a country like the UK or Italy, with 60 million inhabitants for Italy, with Sweden which is 10 million inhabitants; these kinds of schemes should be assessed, in my personal opinion, at regional level. This is because, normally, most larger countries are composed of regions and regions have a strong role in deciding which way to go. Italy is a clear example. Each regional authority has steered the system in a different way. That is why in the southern part of Italy we are lagging behind, because we are missing infrastructure; composting plants basically. However, we have great expectation for southern Italy.

In other European countries like Spain, as you said, we have some advanced countries like Catalonia or the Basque country, where they have large regional autonomy which means they can make rules at regional level that drive the system in the right direction. Catalonia has had a law on separate collection of food waste since 1996, if I am not wrong. While the other part of Spain did not. That is why Catalonia is the best practical case in Spain. They started before, they have the financial instruments for that and they have the basic laws acting as drivers.

**Murad Qureshi AM (Deputy Chair):** Thanks for that, Marco. I am just wondering if there are regional variations in the UK, but we will find out later.

**Roger Evans AM:** You mentioned that Catalonia has laws requiring the segregation of waste. How are those enforced? Are people fined for not segregating, are they rewarded for carrying out segregation? What works?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** To answer briefly, the law on point 85 said we have to start separate collection for municipalities beyond 5,000 inhabitants. The difference between Italy and Catalonia, and the UK is that we have many more municipalities than you have in UK. You have about 360, if I am not wrong, while in Italy we have 8,000. So the first way was to steer between small and national municipalities.

Secondly, you are not fining the inhabitants themselves. There is an economical driver, a landfill tax, which is higher for those municipalities which are not introducing separate collection schemes.

**Roger Evans AM:** We are familiar with that here and, indeed, some of the consequences of that which I was talking about this morning, the unintended consequences. But if you as the council are

getting the fine, how do you make sure your residents actually do the recycling so you don't get fined?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Since your mayors are in charge, at least mayors are normally in charge of running municipal solid waste management, they are also in charge of deciding whether to start separate collection schemes. Normally these penalties are designed to have the funding for supporting those municipalities who want to apply separate collection. It is a way of getting the money, public money, diverted from those municipalities not starting separate collection schemes; and somehow economically supporting the start-up phase of those municipalities which are starting separate collection of food waste. The mayors in that case, in my experience, both in Catalonia and in Italy, have no chance to escape because the landfill tax is applied once you get into the landfill or into the incinerator, so it is applied at the gate.

**Roger Evans AM:** I still don't understand why people, why individuals would do comply. Maybe your presentation on Milan will cover that.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Individuals anyway are paying this increase in waste management cost through their waste fee. Probably this was a missing point. The mayors are paying and normally all over Europe the waste management costs are paid by waste management fees or taxes.

**Murad Qureshi AM (Deputy Chair):** I should ask WRAP and Wayne about your perspective on what you have just heard, and whether there are things that strike you as something which are worth noting in the London context.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** What I think I take from that is, there is good and best practice in mainland Europe, just like there is good practice in London. There are some really good examples of food waste collection in London and there are some boroughs that don't collect food waste at all, for a variety of reasons. I certainly think that we could do better in a number of respects. We could, as London, be clearer about what the London offer is. I think that would help. I think communications wasn't mentioned, but communication is really important to drive up participation in these kinds of schemes and keep the feed stock, kind of, clean.

We learnt an awful lot from the flat recycling scheme that we ran. London, presumably like Milan, has a high level of flatted properties, which are very difficult to access. Because they have no gardens, it is quite attractive to collect food waste from them, rather than food and green waste. Therefore you do get a clean food waste stream from them. I think we have a lot to learn from mainland Europe but at the same time I think mainland Europe has some things they can learn from London too; so I think a mutual exchange of views and we have already exchanged email addresses.

**Murad Qureshi AM (Deputy Chair):** What are the main features of the food waste programmes in

London, in your mind?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** The thing is London is made of 33 different collection authorities, so there are different flavours, if that's the right word, of food waste collection system in London. Partly that's problematic. They tend to be from flatted properties, they tend to be food waste, housing units, situated near the entrance to the property with a kitchen caddy; and there are also kerbside schemes for households that can accept kerbside schemes. The big challenge for London is that the cost savings which should accrue from collecting food waste, all too often are not felt quite as immediately to some local authorities as they could be; and that is because of the two-tier arrangement. There are contractual issues. Some of our colleagues around the table today work for unitary authorities, so they can see quite clearly the savings that they make from the disposal level; and some of our colleagues work for two-tier authorities. Sometimes the passing down of those savings aren't as immediate, maybe, as they could be, which means it is difficult sometimes to make the case.

**Linda Crichton (Head of Collections and Quality, Waste and Resources Action Programme):** It is useful to have an update on the European situation. Marco really highlighted three main types of schemes: separate food waste collections; mixed food and garden collections; and the services that are more specifically designed for flats or high rise properties. I think when you look at London and when you look at the UK as a whole, we see examples of all these types of scheme in operation. When WRAP first started to look into the area of food waste collections, which was back around 2006/2007, we did have the benefit of learning particularly about some of the Italian experience; and certainly that did influence our thoughts around how to collect food waste separately. Since then we have evolved to say that if you are collecting food waste separately from other materials, then there are different ways that you can do it and how you do it tends to fit in with your overall service profile; taking account of how you collect refuse and how you collect dry recyclables. Certainly our experience in the UK is that separate food waste collections - and particularly separate food waste collections that are provided on a weekly basis - do generate higher yields than mixed food and garden collections that are on a lower collection frequency. Very often they are fortnightly. That is probably less of the case in London, but certainly outside of London these services tend to be fortnightly.

**Jenny Jones AM:** Wayne, what is it you think that mainland Europe can learn from us?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** I think we have done a lot of good work on flats recycling and I think we have a lot of good evidence of what works and what doesn't. We spent £5 million on doing flatted recycling in general and a sizable element of that was on the instruction of food waste specific schemes in flatted properties. I think there is a lot of good practice there that could be generally applicable. Places like New York as well, they would, I think, find some of the stuff that we did quite useful. Some of the stuff didn't work as well, which I think is sometimes just as useful to know what doesn't work as what does work.

**Jenny Jones AM:** But some boroughs have been collecting from flats for well over a decade, for example the London Borough of Southwark. What was special about the system that you looked at or

you piloted?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** We looked at a variety of different ways in which food waste could be collected. Could you retrofit, could you put mini banks, were things like food waste housing units important, or could you just have the container without a housing unit? How important was the communications? What effect did it have if you engaged the caretaker in advance? A lot of this stuff actually is common sense, but it is useful to have quantifiable evidence of the difference it makes. What difference did it make to give out free liners with your caddies, those kind of things.

We have detailed evidence which - and WRAP had a lot of this stuff too - we have been able to make a significant contribution to the sum of knowledge around what is a good way to collect food waste from flatted properties. For example, the results from London were 73 per cent higher than we anticipated according to the WRAP data, so WRAP have had to update what is a good yield to expect from a good food waste service on the back of some of the good practice that we developed in London.

**Jenny Jones AM:** I will come back to this. Thank you.

**Nicky Gavron AM:** Can I just ask Wayne and Marco, what difference does it make if you put fish and meat and bones in with your vegetable waste and so on? Because my borough, Haringey, has just switched and I don't understand why. Does it make a difference to how it gets treated in the end?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** From the treatment point of view, no, it doesn't make any difference. If you are going to recycle it you are going either to AD and/or combined with composting. From the separate collection point of view, you must be much more careful in designing this scheme in the way that it is comfortable, clean and compact, so that households are not facing any difficulties with odour emission or leakage or anything else. This is a very important point also for the UK and northern countries where your climate conditions are better, but you have to keep the waste inside private buildings for about one week, if you are talking about weekly collection. Therefore it becomes very important that the scheme is designed in that way. That it is, as I told you, comfortable, clean and, from our point of view, compact for all the collection chains, starting from the kitchen out to the collection vehicle.

**Nicky Gavron AM:** Right. What is so special about Bristol?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** I just quoted Bristol when I prepared these slides because my information was that it was one of the first or the first larger cities in the UK to start collection schemes for food waste. I have spotted them in the picture with this small 25-litre buckets which were given to semi-detached houses, households with gardens; and they get a kitchen caddy as a standard tool and a 25-litre bucket to deliver the food waste to the collection service.



The 25-litre bucket makes a split between garden waste and food waste, because it isn't large enough to collect the garden waste arising, which can go with a different scheme, but it is big enough for a weekly collection of food waste for an average UK family. The positive thing is you can check the quality, you have a one to one relation, one waste producer, the household, one bin. The whole chain was guaranteeing the quality, the amounts and also that you don't need to compact the food waste because basically you get 25-litres of water. Food waste is made up of 80 per cent of water. So this was, from our point of view looking from outside, the positive thing of that experience.

**Linda Crichton (Head of Collections and Quality, Waste and Resources Action Programme):**

I would just add that, yes, Marco is right in that Bristol was one of the early cities in the UK to adopt separate food waste collections, but that model of collection that he has just described is now much more commonplace across the UK. It is just that Bristol was one of the early adopters, but many other local authorities are collecting food waste now in a very similar way.

**Kit Malthouse AM:** Nicky, can I just ask, were you saying that Haringey are making you separate your animal --

**Nicky Gavron AM:** No. They used to --

**Kit Malthouse AM:** So caviar from asparagus?

**Nicky Gavron AM:** You used to put your animal waste in with your residual, so to speak. Now you put it in with organic. I always wondered about that.

**Kit Malthouse AM:** Okay. I wanted to ask Marco, you touched on the practical issues around heat and presumably in southern Italy you can't store food waste for as long as you can in Norway, given the ambient temperature and the associated hygiene problems. Is there a particular issue around the type of equipment and the frequency of collection that encourages people to -- so if you know you are going to get your waste collected every day, you are much more likely to do it than otherwise? Not least also, and I would be interested to know what other problems you might have had. I mean, in parts of London we have particular problems obviously with rats, rodents, mice and all the rest of it. But also I have personally watched a fox, an urban fox, open a 25-litre food waste bin in Islington delicately with its paw, and then eat heartily from what was left inside. I didn't know if there were any particular issues which have been addressed elsewhere around animals interfering with waste.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Frequencies are directly related to the temperatures. Just to give you information, in the northern part of Italy, Milan included, we collect food waste twice per week. While in the UK it is once per week. In southern Italy we are collecting food waste up to three and a maximum of four times per week. Our advantage is we were starting from frequencies for collecting mixed municipal solid waste in Milan or in northern Italy of three times per week, so the frequencies depend on the temperatures.

**Kit Malthouse AM:** But does frequency also incentivise behaviour?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Definitely. Waste, it is like water. Normally the recyclable waste goes into the easiest direction and to make the system easy and comfortable you have other recyclables. However, you need to have higher frequencies of collection for food waste than residual waste. This is one of the typical aspects of the central European scheme that I am confronting a lot of German experts with, and their scheme is designed so that you have a 50 per cent chance to get the right bin, as you are collecting once on one week residual waste and on the other week biowaste, so it means every two weeks I am probably missing the right bin. Our experience is when we maintain the collection frequencies of food waste higher than residual waste, then the food waste goes into that direction.

The tools that we apply for making the system feasible also in very critical climatic conditions, I will talk about that during the presentation about Milan.

Coming to the fox issue, I don't know if we can just go back to my slides which I was showing before of Bristol, in that picture there is a standard tool we are using in Italy too.

**Kit Malthouse AM:** I have seen a fox open one of those.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Normally, they have a handle which has a block. If the handle is in the right position, because neither a dog nor a fox has a thumb, they won't be able to open it very easily. That is why these are second generation buckets, these are modern tools, that are also largely applied in the UK, that prevent the material falling out even if the bin falls down.

**Kit Malthouse AM:** So the equipment matters?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** The equipment matters a lot.

**Kit Malthouse AM:** Bags are no good?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Bags only for food waste collection, definitely not.

**Kit Malthouse AM:** Right. Okay. One final question I just want to ask you, this is about efficiency of the system. This strikes me as quite an inefficient system, you have to put it in bags and store it. We have to have men or women to come and pick it up, throw it in a big truck, take it off, deal with it. In the 1970s and 1980s there was a fashion to have these grinder things in the sink. My dad used to call ours the "garborator", I don't know what it was actually called. We were always getting teaspoons trapped in it, that was the main issue, and we were terrified of losing our hands. But actually it struck me as quite a sensible thing, that you grind up your waste and it disappears into the water system. Why has that gone out of system? It is much more efficient, presumably?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Three arguments. One is strategic, if I use a grinder it goes into the sewage system and it depends how the sewage system is designed. If, as it happens in many countries, we have sewers coming together with partly industrial sewage it is very likely that I won't be able to recycle the sewage by composting and get back a high quality nutrient for soil.

This is a strategic approach. In those areas where it has been applied first of all you have to design the sewage system from the beginning, because you need the right slopes and those kind of things, otherwise the maintenance of the scheme would be much more cost intensive.

You have to design it from the beginning. Where it has been done typically in northern Europe, Sweden, Denmark and some Italian cities, the kilogram per inhabitant per year which were diverted and brought into the sink system was much lower than effective working door to door schemes of food waste. So the effective necessary was not as high.

**Kit Malthouse AM:** So people didn't find it easier to shove it down the sink?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** You know, for bones you have some problems, for example. For bulky food waste you have some problems. When you have the packaging inside that, you are unsure what to do. That was our experience and that, in addition to an economical point of view, is why I think they phased it out.

**Kit Malthouse AM:** Right. Thank you.

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** Can I just quickly add to that, that they are also very resource hungry. They use a lot of water and electricity to function. One of our directors has done analysis of how much energy and water is involved in that process with food waste and it is dreadful.

**Kit Malthouse AM:** Compared to the process that it has to go through with a lorry and men?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** Yes.

**Kit Malthouse AM:** And a great plant and buildings. Okay.

**Murad Qureshi AM (Deputy Chair):** That is interesting, because I know in Manhattan that is what is encouraged. It seems as though they seem to be able to do it and no one else.

**Len Duvall AM:** I just want to direct questions to Wayne and Linda. There seems to be two contradictions, I think you said it once. On the disposal side or waste management side it is about cost and what is viable for some local authorities. How do we get a step change in dealing with food waste? On the other side, my first question is about consumer attitudes and some of the issues

around stuff that is thrown away by consumers. Is this an issue about dealing with the retailers about the sell by dates and use by dates?

Are we, in fact, trying to reduce the amount of food waste that is disposed of, that obviously then affects the cost of what is left behind, and we really won't get a step change across London because they are contradictory? Some of the work that you did in west London made some reductions, but that doesn't help out people that need to dispose of it efficiently or effectively or to get some money back on it, if they can.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** I don't think there is a contradiction I think -- what you have laid out in terms of priority order is absolutely right. I believe the Mayor has a food waste hierarchy which effectively respects that order. Yes, we would certainly like to do more work on food waste prevention and I hope our operations programme from 2015 onwards will have a significant amount of resources diverted towards communications. Some of that will be for prevention and some of that will be to encourage participation in existing schemes. Then we have to deal with what is left and we have to deal with that in the best way that is possible. So I don't see any contradiction. For example, LWARB have funded FairShare, and one of the first things we funded actually was a FairShare depot which has now been consolidated into a depot in central London. We have done some work on food prevention, but at the same time we have to respect the fact there is an awful lot of work to be done on food waste recycling to. This is why we have this twin track approach.

Just to finish off, the point I was making was there are some barriers, some institutional barriers, to really understanding the cost savings that you can make from diverting food waste away from other disposal systems, and that is to do with the complex arrangements between some of these two-tier authorities in London.

**Len Duvall AM:** What would be the suggestion, how to solve that problem then?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** Well, that is an interesting one. That will get me into all sorts of trouble, that will. I think at a leadership level, London needs to sit down and consider the best way for it to deal with some of these materials; maybe by thinking about making a recycling guarantee to all Londoners. Maybe by analysing its current arrangements within the waste disposal authority, and thinking about whether they are the best arrangements to have, or are there any other ways in which we can do things in London. I think it is a good time to do it now, at this point in the political cycle. We will see if London leaders want to take that challenge. I think there are significant savings to be made in doing that to.

**Len Duvall AM:** If I can go back to my first question, which was about consumers and their attitudes towards it. The sell by dates confuse me. We have a big row in our household, I will still eat it and others won't. In that sense, are there things that we should be lobbying for or working towards, or are there studies relating to understanding human behaviour about throwing things away? What have you found?

**Linda Crichton (Head of Collections and Quality, Waste and Resources Action Programme):**

We have done a lot of research in terms of understanding consumer behaviours around food waste and that has really informed the Love Food Hate Waste campaign. What we would say is that in terms of the management of food waste, the absolute first priority has to be to encourage people to produce less food waste. That brings the greatest economic, as well as environmental, benefits. Linked to that we have been doing some consumer awareness raising about how much food waste there is. One of the key things that comes back from all our consumer research is there is a slight denial factor, that people don't actually realise or haven't really recognised how much food waste they actually produce.

Therefore the first step is actually raising the awareness that, yes, most households produce some level of food waste. Now, that might vary depending on the characteristics of your household, but first of all people and households do produce food waste. The next thing is that having raised that awareness and got that understanding that people do produce food waste, it is what they can do about it. The Love Food Hate Waste campaign certainly has developed lots of tools and information and recipe ideas to help people reduce their food waste. Secondly if they do produce food waste, and a lot of food waste that is produced is not stuff that is edible it is chicken carcasses and potato peelings and such like, the next best thing to do is to recycle that.

The messages around prevention and recycling are complementary but we have to find a way of getting that over to householders and consumers in a clear way, so that they know what they can and can't do.

**Len Duvall AM:** Just the last point on use by dates and sell by dates. Is that a big issue?

**Linda Crichton (Head of Collections and Quality, Waste and Resources Action Programme):**

Yes, we have done some work because, you're right, that has come up many times in terms of consumer confusion over all these different labels. We have done some work with the sector, with retailers and Food Standards Agency on labelling. Our advice from that work is that, really, best before is probably the clearest and simplest type of messaging. It is advising people that a product should be used and it is best in terms of the overall product quality etc, before a specific date. There may be cases where use by dates are critical, but best before seems to capture a clearer message to consumers.

**Len Duvall AM:** Thank you.

**Stephen Didsbury (Head of Waste and Recycling Services, LB Bexley):** When you first asked the question it sounded like there was a conflict between food waste reduction and collection, when actually they work together. The first thing that happens when you start collecting food waste separately is residents realise how much food waste they are throwing away and it is one of the few waste streams they have some control over. When they find they are throwing the second buy one get one free item away, next time they go out shopping they might buy the one which is 25 per cent extra or something; so then they have less waste to throw away. What usually happens is you get a bulge in

your food waste when it starts and very quickly your total waste reduces. It is not going back into residual, it is just people aren't producing so much in the first place.

They are complementary, as Linda and Wayne said, and then you just organise your collection system to collect what is left. We are getting about half the food waste out; the other half of the food waste is in a residual waste bin. The largest proportion of that is still in its packaging; so that is what we are working on at the moment, trying to persuade people when they do find something at the back of the cupboard or the back of the fridge, to take it out of its packaging. If it is a jar of olives, well, they can put the olives in the food waste and we can have the jar as well in the recycling.

**Len Duvall AM:** Can I just ask very quickly, I take the arguments of why we have such inconsistency in London. Flatted developments, I know some of the problems, it seems to be pretty obvious, but why do you think we still have a number of London local authorities that do not or cannot seem to get their heads around that this is a worthwhile task, to collect separately?

**Stephen Didsbury (Head of Waste and Recycling Services, LB Bexley):** Some of it is to do with their contractual arrangements. For instance, East London Waste Authority, effectively they pay the same if it is recycled or disposed of, so they can't make the savings on the disposal of paying for the collection. Some of it is to do with probably misconceptions by both the members and the officers almost, "Oh, this will be horrible dirty waste, our residents wouldn't want to do it and therefore we won't provide the service"; which doesn't tend to be the case. Some of it will be because they have other priorities at the time and this is slightly further down the list, especially the two-tiered authorities; unless both authorities agree this is where we want to go, it is more difficult to coordinate the collections.

**Len Duvall AM:** Thank you.

**Murad Qureshi AM (Deputy Chair):** Linda, just on the retailers, apart from adjusting the sell by dates to whatever you suggested, was there anything else retailers could do to improve reduction in food waste?

**Linda Crichton (Head of Collections and Quality, Waste and Resources Action Programme):** You may have heard of the Courtauld Commitment which is a voluntary agreement which WRAP manages with some of the leading retailers and brands being signatories to the Courtauld Commitment. One of the key objectives under Courtauld is to actually reduce consumer food waste, so they have been key partners particularly in terms of the Love Food Hate Waste campaign.

They have, in their various ways, been doing their own messaging at store level and messaging to their customers about the opportunities to reduce food waste. Using leftovers is an example of one of the campaigns, so helping out their customers to make the most of the food that they are buying.

They have obviously been actively involved in the work around labelling. I think there is evidence that

some of them have certainly reviewed their buy one get one free offers so it may be a range of products are eligible under that sort of initiative so that you are not buying the same thing twice. In some cases we have also had examples where retailers have worked locally with local authorities to fund communications campaigns locally.

The other area they have been working on is product sizes, as household sizes change, with a lot more single person households, then designing products to be the right portion to fit with single person households. We have been doing a lot on portioning of products and also the packaging to help keep things lasting longer really.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** May I just briefly add that we do work closely with WRAP, certainly on the communication side of things within London, and we intend to continue that partnership in the future. To that extent, we hope to exploit your relationships - if that's the right word - with retailers, and see if we can get a better deal, certainly in terms of communication which is fearfully expensive for London, so we can roll out some more of those well regarded waste and food waste prevention campaigns.

**Murad Qureshi AM (Deputy Chair):** Okay. Thanks. I will certainly be glad to see three for two offers reduced, there was a time where I kept going for them and I realised I never actually finished them off.

Marco, can we go to your second presentation, because I think we can concentrate on Milan and what is being done there.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Coming to Milan. This is the focus of what is going on in Italy regarding separate collection and recycling of municipal solid waste. I use this slide just to make one point which is important. I already told you these kinds of schemes have a specific collection scheme for food waste with higher frequencies, and a dedicated scheme for collecting garden green waste with normally low frequencies.

The important point to keep in mind is that collection schemes for food waste in Italy generally are used both for collecting food waste produced at households and at small commercial activities, the Ho.Re.Ca sector: hotel, restaurants and caterers. They are all served by the public municipal solid waste management service.

Coming to Milan, the metropolitan area. Here we can see, from Google Maps, this is the municipality of Milan with roughly 1.5 million inhabitants; and the surrounding areas, which are completely glued into the Milan area, so you do not realise when you're getting out Milan and getting inside, for example, Cinisello Balsamo which has the same density, it is a continuous area. If we take into account, let's say, the surrounding areas we reach about 2.5 million inhabitants.

My point is when you are organising a waste management scheme it isn't that important how large the municipality is. For the purpose of cities, it is important to know the average density of inhabitants,

because the higher the density of population, the more complex the collection scheme will be. Actually, Milan is Italy's most vital economical centre, it has a strong transient population which is moving every day to the town. In 2012, so before introducing the total integrated scheme for food waste collection, food waste was collected mainly and only at the Ho.Re.Ca sectors, and it was collecting roughly 23 kilograms per inhabitant per year. The recycling rate was static since years at about 35 per cent; insufficient compared to the Italian national target which claimed that all municipalities had to reach 65 per cent recycling. This target was set well before we had the EU recycling target.

In the municipality of Milan waste is managed by Amsa, which is a public owned company, and it is responsible for all municipal waste management of all kinds of waste collection and recycling. They own an incinerator and they are also responsible for street cleaning and rinsing.

The decision in 2012 with the municipality was to start separate collection of food waste. All the other waste items at that time were already collected at the doorstep, except food waste. Milan is divided, or was divided, into four districts. Each district has about 320,000 inhabitants, so roughly equivalent to some of your London boroughs, if I am not wrong. The decision was to have a step price instruction of the scheme, so we started in November 2012 with the first district and in June of this year the final district started separate collection of food waste.

In each district, we divided the project into three phases to investigate and survey exactly what is the composition of each dwelling, how many households, how many families I have for each dwelling and so on. The second phase was distributing the collection tools, so the kitchen caddies, the bins and so on and contemporarily, as a first step, there was the element of awareness, education and information to the population.

Just to give you an idea of the complexity, this is a GPS mapping of the first district that we started, where I was directly involved in designing the schemes. The first thing we had to do was to verify the available spaces for additional bio bins in private property, so in the common areas of each block. At the same time, we started preliminary contacts with building managers. Each building manager was informed that there was a deadline for starting the scheme, that there would be a distribution of tools for the families and of bio bins for each block.

There was the need for mapping the areas, especially for mapping the refuse chute, which shouldn't be there but there were about 1,000, if I am not wrong, refuse chutes still working. This was the right opportunity to map them and to close them down completely, because they are unhygienic to be used for waste, especially for food waste.

We also mapped, critically, those buildings which were lacking private spaces to allocate the containers. From the beginning, before even doing the advertising, this information was acquired and was available in specific databases. At the same time, the distribution of bio bins and starter kits were started about two months before starting separate collections, which means that each building was equipped with a variable number of bio bins, according to the number of households which were living



there.

The starter kits are an important investment factor and are intended to help families to separate food waste. Milan opted for vented kitchen caddies and an initial set of 25 bio bags made of compostable bio plastics. They were delivered to each building, together with an information leaflet and at the same time a specific call centre was established and an app for mobile phones so where you can find relevant information, such as the calendar of collection for your building and so on.

These investments were, of course, done by the municipality and by the waste management company. One point, and this was asked before, is how do you make separation of food waste as comfortable as possible, since you have to manage waste which is high in moisture content, which may have leakage and which has a high density. We opted for vented kitchen caddies, small enough to prevent the co-mingled collection, for example, of packaging waste, but large enough to contain a production of three days waste for each family. That way we have small volumes and it should be clean, and that is why we delivered them and we equipped households with a starter set of compostable bags.

In Italy, the standard option is to use compostable plastic bags, but generally speaking for biowaste collection there is also the paper version of bags which are still available. Italian national legislation also requires that the bags and liners must be compostable according to a European standard about compostability.

The message is you have to keep the system in the kitchen compact, comfortable and clean. By the way, that is nothing new for UK. Here are some of the pictures I have in my personal database and, as you can see, one of the kitchen caddies is from the London Borough of Hackney. The only difference is that these are closed buckets, which we used until 2010. Nowadays we prefer vented kitchen caddies and this is a leaflet from the UK showing a vented kitchen caddy, so they are easy to be found. Vented kitchen caddies have the advantage that the food waste loses moisture. Losing moisture means there are less other emissions, fewer problems with unpleasant discharges, as the waste is drying out. Therefore reducing the collection frequencies is easier.

The other important point is you have a 10 per cent mass reduction in three days, which means that the costs for composting are decreasing. It may not be very pleasant for the companies I am representing, but from the point of view of municipal solid waste management it is an economical advantage. It is a win/win situation. I lose waste, it is a reduction, it is easier to manage, and I can keep collection frequencies lower. That is why Milan went for vented kitchen caddies but, basically, it is the same recipe that you find in Hackney.

The other important point is that communication must be clear and like other metropolitan areas, it is a multi-cultural, multi-language area. All of the information on the website, webpage and on the mobile phone application, was done in eight languages. For example, if you go to the website you will find, in this case, information for people coming from the Russian speaking countries. All the information is there in their language, because we know if they don't know how to manage the scheme, they are unlikely to participate even with the best tools provided.

These are some pictures of what we call high rise buildings in Milan, so 50 to 400 families living in one block. Here we see a different situation. I chose these pictures because you can see the small open skip or non-compacting vehicles, which is a standard tool that is used in southern Europe to keep the collection costs of food waste as low as possible. Compared to a compactor, these vehicles cost three to four times less, which means that the running costs of these vehicles are much lower; hence I can keep the cost for collection lower than if I use compactors. I am not going into detail with this, but I can give you plenty of detailed information if necessary.

The other point is the scheme and the collection crew is responsible for checking the quality before emptying the bins. If the quality is wrong, if we have plastic bags inside or non-compostable materials, they get a red sticker, like in football, and the bin is left there. As you can see from the pictures here on the bottom right, these are pictures taken inside the collection vehicles. Most of them are compostable bags, apart - and I show deliberately - from two plastic bags here at front.

The municipality of Milan collects food waste twice per week from households, and a large food waste producer, like the Ho.Re.Ca sector and the schools, collection frequencies are six times per week. Basically, every working day.

As I told you, the collection is done mainly with non-compacting vehicles and most are powered with methane or bio diesel. Food waste is either brought into the transfer station or downloaded into packer trucks, since the recycling plants are located outside Milan. I underline this aspect, because I saw it as one of the elements of an evaluation in your briefing paper, around the difficulty in locating a composting or AD plant in high density areas.

Milan has historically been underequipped with composting plants. What Milan does is it transports its food waste to a plant located about 65 kilometres away. It is a combined AD and composting plant. It is a large plant, 250,000 tonnes per year, so it is equipped for Milan and other municipalities and it is economically sustainable.

Obviously what was done at the same time was to switch collection crews from the residual waste collection to the food waste collection. At the same time, as a side effect of introducing food waste collection, there was a rise in separate collection of packaging waste, i.e. paper, glass, plastics and cans. People became more conscious about the recycling they were already doing.

Coming to the results, because I think this is important. These are the weekly collection rates of food waste in Milan in kilogram per inhabitant per week. Multiply it by two and you get a weekly collection rate in households, which I know is a parameter which you are often using in the UK. The three lines are for the three districts where we started food waste, because the fourth district started in June and I don't have the data available.

As you can see, in about four to five weeks the scheme reaches its optimum situation for all three areas. Our expectations were lower than what came out. We were expecting about 1.4 kilograms per

inhabitant per week and actually we are collecting about 1.7 kilograms per inhabitant per week; so roughly 91 kilograms per inhabitant per year of food waste.

The other point is quality. I addressed this topic in the first session. The quality is good, we are monitoring it directly, we were involved as CIC [Italian Compost Association], in different areas of the town, so citizen to suburb, social housing and in time. The quality is remarkably good. It is on average 4.3 per cent of non-compostable, which is good for our parameters. The results in terms of diversion, so the question of how much food waste is still inside residual waste, is positive. We have 14 per cent of the food waste which is still collected inside residual waste and the rest is separately collected and recycled.

**Nicky Gavron AM:** What was that percentage you just said?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** I said from 100 kilograms of food waste we know that 86 per cent are going into separate collections, so 86 kilos into separate collection and 14 kilos are still inside the residual waste bin, which means that our diversion is very effective. It is a way to assess the efficiency of a collection scheme. Before you had all the food waste going into residual waste bins. When you start up a collection the question is how much are you collecting separately and how much is still in the residual waste. We have data from Milan, because we are analysing both residual waste and food waste for the same areas at the same time, before and after introducing the schemes, and so we have an assessment of how effective the scheme is.

Customer satisfaction shows that 80 per cent of the population is positive with the new collection scheme of food waste. So the question is, were they very satisfied with the collection scheme or sufficiently satisfied. 14 per cent did not give a clear view and 6 per cent were unhappy with the scheme. After a lot of customer satisfaction surveys over the last 20 years in Italy, 6 per cent, roughly, is the hard block of people who are never keeping to any collection scheme. We know also that the participation rate from the survey is between 80 and 90 per cent. So of 100 households, between 80 and 90 are regularly on a daily basis, separating their food waste at home in these high density areas.

Coming back to Milan and comparing it to Europe. This is the outlook between large municipalities which are collecting biowaste and food waste in Europe. Within Barcelona, Vienna, Munich, London and other German towns, what you can see is the amounts are significantly higher. The amounts are comparable in Milan to those of Barcelona. However, the point with Barcelona is that the scheme is likely to be highly contaminated by non-compostable factors delivered into the large round containers.

The conclusion is the separate collection of food waste achieves outstanding results in Milan and in other cities with similar density of population in Italy. It has a very good diversion rate, as I already commented. The use of kitchen caddies and compostable bio bags allows for a large acceptance and participation rate in population; and this is also verified by customer satisfaction surveys.

The non-compostables inside food waste are low, so there are no problems for recycling these kinds of materials into biogas and compost. From our point of view, food waste collection can be made

effective in metropolitan areas. Thank you very much for your attention and sorry to be a bit longer than planned.

**Murad Qureshi AM (Deputy Chair):** Thank you very much, Marco, for that extensive presentation. I am sure many of the issues that still remain in the presentation will be asked now.

**Nicky Gavron AM:** Thank you for that. Forgive me if I haven't quite grasped this, but how much of the waste you collect is going to composting and how much to anaerobic digestion?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** 100 per cent, because this is typically for Italy --

**Nicky Gavron AM:** Well, no, some is composted and some --

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** No, no. It is all first anaerobic digested and then composted.

**Nicky Gavron AM:** Oh, I hadn't understood that.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** It is a combined anaerobic digestion composting. The reason why, is that in Italy compost is already a material, it is already end of waste and has been since 1998. We are using all of the waste to create first biogas and the digested is then composted.

**Nicky Gavron AM:** Oh, I get it. Okay.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** It is a twinning plan. So it is first anaerobic digestion and with the digested you get compost out of that. The reason is that in Italy compost is not a waste and has not been for many years.

The second argument is, it is a strategical factor for Italy. For us it is much easier to market and handle a solid product, compost, than a liquid or semi-liquid sludge. So there is a strategic factor. If you talk to our Swedish colleagues from the biogas and composting sector they will tell you, "No, Sweden went directly into the anaerobic sector only".

**Nicky Gavron AM:** Okay. I just want to ask Wayne do we do that? Do we have composting next door to anaerobic digesting?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** The plant that we have in the London Sustainable Industries Park. TEG operate it. I think that does something similar. It is an anaerobic digestion (AD) plant and an in-vessel composting (IVC) plant. Liquid digestate goes to land but the solid digestate, I think, is blended with the garden waste to form a solid compost. So it is similar-ish.

**Nicky Gavron AM:** Okay. Am I right that we don't have much closed vessel composting in London?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** There are a few plants. I don't know if there is still the plant at Edmonton, is there? Yes? There is a big plant at Edmonton and it has been there for quite a while. That might account for what has happened to your food waste in Haringey.

**Nicky Gavron AM:** Might be what?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** There might have been a change in contract.

**Mark Griffin (Head of Waste Strategy, LB Hackney):** I think I can answer that. Hackney is a two-tier authority, as is Haringey where together we are in the North London Waste Authority, which is our waste disposal authority. We deliver food waste to the invessel composting facility at the Edmonton EcoPark that Wayne referred to. In periods of high season, particularly for garden waste, they do use the TEG facility as well. So that is like an overflow facility. In the main, Hackney's food waste goes through the invessel compost facility and then comes back to Hackney to allotments, to schools and to some of our estates as well.

**Nicky Gavron AM:** How many AD parks do we have in London?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** In London I think we only have the one, which is a TEG plant. There is another facility that LWARB has helped to finance by a company called Willen Biogas which is just outside, I think it has an Enfield postcode but I think it is outside the border. I think that is it, at the moment.

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):** There is a third one coming on the Sustainable Industries Park later on this year.

**Nicky Gavron AM:** We have identified a lot of sites, haven't we, in the London Plan for an AD plants, no? Well, for waste treatment.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** I don't think the London Plan identifies sites specifically.

**Nicky Gavron AM:** Well, perhaps it is the waste strategy then.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** As I understand these things, the London strategic plans do not identify sites. That is done by the local plans, by the boroughs and local planning authorities. They will be identifying sites through that process.

**Nicky Gavron AM:** Well, you could tell me, couldn't you, how many there are identified.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** How many identified sites there are?

**Nicky Gavron AM:** Yes.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** I don't know, actually. The boroughs, as I understand it, are preparing plans to meet the apportionment set out in the London Plan and that process is ongoing. It is not complete yet, so I don't know how many sites specifically have been identified. At our level what we do is we kind of react to the market, so if a developer comes to us with a proposal for an AD plant we will consider it, look at it and do due diligence on it; and see whether it is a good idea that we can invest in financially. Some of them are and some of them haven't gone that far because they have been fatally flawed, so we haven't invested.

**Jenny Jones AM:** Do you really think you haven't got any sort of leadership role on this?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** Who, LWARB?

**Jenny Jones AM:** Yes.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** In relation to?

**Jenny Jones AM:** Well, the whole idea of what we do with our waste and in terms of perhaps having more AD in London. Perhaps Charlotte could say, how many do you think we need in London to actually deliver the sort of levels that we are hearing about in other places?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** Off the cuff I wouldn't be able to say because that is very much dependent on quantities. We would have to look at the quantities of food waste that is capable of coming out and over what time period, so I don't think I could answer that.

**Jenny Jones AM:** But more than one, you would think?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** Absolutely. And there are, in the note that we were given, a number of sites that are either in planning or in the process of being constructed. There is a separate plant at Chertsey, if that counts as anywhere near London. I know some of the food waste is going there and some of the food waste is going over to Oxford. There are one or two other sites in planning, for example there is one in Sutton. I think there

is a rumour of one in Greenwich, Bromley. So there are a few in planning, but in terms of the number of, we could go and calculate it for you.

**Jenny Jones AM:** More than one, is the point?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** I would have thought so, yes.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** And there are plants in and around London. I think the tendency that we are seeing is that developers are choosing sites that are located around London, because of access to agricultural land and still having the catchment of London. Also, because land is cheaper. That is a tendency that we have seen which mitigates against development within London, hence we have invested in a plant just outside of London.

**Nicky Gavron AM:** I am coming on in a minute to where there is potential for more AD plants, but I really did think that we had in our waste strategy - and I would have thought, Wayne, this is under your purview, you are not in the GA with waste strategy but you carry out the waste strategy, to a certain extent - and I would have thought, we have identified sites for waste treatment. I am not necessarily saying what the treatment might be, but it gives scope for AD right across London. The London Plan, the current alterations talk about the release of some of this land, not so much waste sites as waste sites that would be on industrial or strategic employment locations. I am concerned about that, in light of the potential we are hearing about. I just want to register that.

Now, I think I should just go on with, having heard from Milan, can I ask our borough representatives how they think we could improve what we are doing, learning from Milan? What could we be doing?

**Stephen Didsbury (Head of Waste and Recycling Services, LB Bexley):** Well, it is quite interesting to see how they use the communications. Things like apps and things like that which are probably a stage on from what we might have done in the past. They have done it at a pace they can cope with, so they have done the whole area over a, kind of, two year period? They have not tried to do everything at once, they have done it in stages so they can develop it in, get people settled in, and probably learn from what happened in the first stage to later stages. If we were going to change how we did our collection system, we would actually look at that to see how we do it. We have a well-established system at the moment. Obviously we wanted garden waste, we wanted food waste, so we have been doing that for over ten years now. If we were going to change it and do food waste separately, that would be quite a good model to follow.

**Nicky Gavron AM:** Can I ask, there are a number of boroughs which actually are not doing any food waste collection. What do you think might incentivise them?

**Stephen Didsbury (Head of Waste and Recycling Services, LB Bexley):** You make it clear in your report, there is usually quite a big gap between what you pay for waste to be disposed of either

in incineration and landfill and what it costs to do food waste. That in our case it is over £50 a tonne, I think nationally it is usually slightly more than that, and the collection costs are probably not £50 a tonne; so there should be a financial advantage to do it anyway. Probably trying to coordinate plants and collection systems together so that people, you know, I mention in our response it is almost the chicken and the egg. People don't collect it because there is nowhere to take it to, people don't build plants because there is no demand.

It is trying to break that by perhaps getting people together, the sort of thing that Wayne does which is he got investors who want to build things, we have a waste stream. It is a bit of matchmaking as well. A lot of these plants take commercial food waste so they are not necessarily dependent on household waste streams anyway. They have other sources of income coming in.

Matchmaking, I suppose, is the best thing and perhaps some financial assistance in getting over the initial hurdles because most authorities at the moment are looking at how they can save money. I think the way to sell it, you would have to show this is going to save you money over the short to medium term so it can go towards their 2018/2019 targets for cost reductions. That would probably be the most efficient way of doing it.

**Nicky Gavron AM:** What opportunities, again, with the boroughs to begin with, do you think there are for retrofitting in the way we have been hearing about from Milan?

**Mark Griffin (Head of Waste Strategy, LB Hackney):** First of all, in terms of learning from Milan I noticed in the presentation that in Milan the communal sites accepted food waste or organic waste from small businesses, so you can imagine the situation particularly in a borough like Hackney with a lot of properties that are flats above shops, the link between restaurants and commercial premises and the flats above. Our communal facilities are purely for household waste, so that would be an interesting development if that were possible.

In terms of retrofitting, we are currently looking at 13 estate sites. It is quite an intensive job, looking at the make up of those sites and improving the already extensive provision. We think we have done our best in retrofitting facilities, particularly for food waste on to those sites, but when you look at it closely, residents still have quite considerable distances to walk to those sites. We are putting them in where we can squeeze them in, our last remaining sites are benefiting from smaller bin housing units so we can squeeze them in even tighter to make sure they are closer to residents. That is a particular barrier. We don't in every case, or we are not in every case able to, present dry recyclables, the residual waste and the food containers together. That could disincentivise people who are used to using the residual waste bins for their general waste.

**Stephen Didsbury (Head of Waste and Recycling Services, LB Bexley):** We found when we were doing the flats, that if we can get a food waste bin in somewhere really only the people living in the flats can get at it, we have a good quality material coming out. However, sometimes there isn't any space so we have to put the recycling banks and the food waste containers near the entrance, then they tend to get more contaminated because other people passing down the road or in local



houses go and add things in it.

It is trying to locate banks somewhere where the residents can find it easily, but not too many other people can wander in and use it. I was quite impressed that they were talking about closing chutes down, they closed 1,100 chutes. I don't think that is something that has ever happened here. We still have our chutes in our larger blocks and you walk down the end of the corridor and you can dispose of your waste or you take your recycling and your food waste down the steps or down the lift with you.

**Nicky Gavron AM:** Sorry to interrupt you. These chutes, are they used just for food waste or are they used for all waste?

**Stephen Didsbury (Head of Waste and Recycling Services, LB Bexley):** No. When the blocks were built in the 1960s and 1970s they were designed for all waste.

**Nicky Gavron AM:** I did a survey once in Haringey when I was a councillor there and we found - of course, we weren't very joined up about waste in those days - that in the housing department, blocked chutes were a big problem and were a cost. But it wasn't seen as a waste issue.

**Stephen Didsbury (Head of Waste and Recycling Services, LB Bexley):** The main problem is you squeeze something through the flap into the chute, so let's say a cardboard box. It goes down the chute and the cardboard box expands and then it blocks the chute. That is how the chutes get blocked, but in Italy they have a good participation in their recycling scheme because they have basically sealed the chutes off.

Everybody has to use the waste system because at the moment if you have a choice of, say, walking from here to the window and disposing of your waste, or carrying it downstairs in the lift and people saying, "Oh, what have you got there?", "Oh, I have my food waste" you are just going to take it to the end of the corridor. You have to be vaguely environmentally-minded to take it downstairs and use the system when they have stopped the easy route. Even if they are going to throw it all away, they still have to come all the way downstairs to throw it all away. That is something I found very interesting from this presentation.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** If I may add, I think this is very important. Actually the waste chutes were supposed to be stopped since the 1980s. There was a law at regional level which was not applied in about 5 per cent of the buildings we monitor. But it is exactly as you were saying, since it is one chute only, which means it is in demand for mixed waste collection. There was a hygienic problem historically and that is why we wanted to close them down, and the other point is you need different bins for different waste flows. That is why those remaining chutes were mapped and then closed down. Obviously not all families were happy about that, because it is an easy way to get rid of the waste. Apart from all the difficulties about clogging and so on, but that is why it was an occasion to close them down completely.

**Mark Griffin (Head of Waste Strategy, LB Hackney):** It is covered at the moment in part of the

pilot projects we are doing, looking at specific estates, closing down those chutes. However, as you pointed out, some of the chutes are defective anyway and the costs of maintaining chutes can be reinvested in terms of improving the recycling facilities. That is part of the project we are looking at in Hackney.

**Nicky Gavron AM:** Yes, we found in Haringey that we weren't looking at waste right across all the departments, so we didn't think about cutting the grass and pruning the trees in the parks as being anything to do with waste. Ditto in the housing department.

The London Plan, do you think that policies - because at the moment we are looking at alterations again - in there are sufficient in terms of waste space and accessibility to it? We have heard about the retrofitting issues so we don't want to be building those issues in again, do we? I just wondered what you thought.

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):** No, that's right. I think the policy angle comes in a hierarchy. I think we have the London Plan which is quite generic in terms of it requires the provision of suitable waste and recycling storage facilities and new development. That is quite generic and I think that probably sets the framework. I think then you have to look at the housing Supplementary Planning Guidance which goes into a lot more detail about what we require from developers in terms of internal storage space for the apartments; and also external space. Then underpinning that, we have the London housing design guide which is very prescriptive about the space that we need to provide in terms of internal storage and also making sure that the external storage, the common parts, if you like, are accessible for people with mobility difficulties and other issues.

I do think that the practical framework is there but I would just build on what the local authorities have said. I think you can generate practical legislation through planning and, as I have said, it is quite prescriptive. I think there are housing management issues that come alongside that, so the registered providers who manage big blocks in London I think can play a role in managing those communal facilities and making sure that, for instance, a bin store is never going to be a pleasant place to be necessarily, but that they are managed sufficiently to encourage people to go to those areas. Also, in private blocks if you have a concierge or caretaker management, that those areas are kept clean and kept relatively attractive, to encourage people to walk the three flights of stairs down with their bags.

I think on a practical level, in terms of a building developer policy level, I think the provisions are within the London Plan and backed up by those various annexes I have mentioned. However, as always with these things, it is sort of a multifaceted approach which includes, some of the things we have been talking about here, but also housing management.

**Nicky Gavron AM:** I think perhaps we should refer this to the Housing Committee. One last question. Can I ask Charlotte, is there scope, do you think in large developments and some of the developments we are for having small scale anaerobic digestion plants or small scale composting plants; and should we be building that into the London Plan?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** I think there is some scope and there are a number of examples that have already been set up, such as the Local Energy ADventure Programme (LEAP) AD project in Camden.

**Nicky Gavron AM:** In Camden?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** Yes. The only thing I would say is that they do need to be properly managed, so you would have to be sure that on any site there was somebody who was competent to manage that plant and get the benefits out of it.

**Nicky Gavron AM:** Where it is done, how does it work?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** Unfortunately I don't know exactly how the LEAP AD project is managed.

**Jenny Jones AM:** Perhaps we should visit it.

**Nicky Gavron AM:** Yes. It is already there, it is in existence?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** It is already there, it is in existence. I would be happy to arrange a visit, if that would be helpful.

**Murad Qureshi AM (Deputy Chair):** This is in Camden?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** It is in Camden.

**Nicky Gavron AM:** Thank you.

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):** Just to come in there, in terms of building in smaller scale facilities I think there is always going to be a natural resistance at the start, until something is proven and something is allowed to develop. Also, importantly, in today's environment, there are viability elements to it. If it is very expensive to put this thing in then people may choose other alternatives. I think it needs to be properly scoped out so that housing associations, particularly ones who might be looking to put in facilities like this in larger scale environments, are confident that it can work.

**Murad Qureshi AM (Deputy Chair):** Can I just ask, I find it very surprising. The AD plants that I have seen have been in sewage plants with Thames Water. Not all definitions have included them as AD plants. Are you suggesting they are biologically different processes all together?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** The process is the same, but the regulatory environment is completely different. At the moment you cannot co-digest, for regulatory reasons, food waste and sewage sludge. It is a different regulatory regime.

**Murad Qureshi AM (Deputy Chair):** Okay. So if you can do it biologically, then what do you have to do to change the regulations to allow Thames Water to do that?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** I believe it is an EU regulation that is involved, interpreted by the Environment Agency, and a lot of people have been very keen to see that regulation changed for quite a long time. It is quite difficult and it would require a change at EU level, that is my understanding.

**Murad Qureshi AM (Deputy Chair):** Okay. That is useful because it just surprises me. The biggest AD plants I have seen have been in Beckton and Mogden and they are clearly facilities that could be augmented to deal with residential food waste. We will look into that as a recommendation.

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** What in fact is happening is that the regulated water industry is looking at how it can use its expertise on treating sewage sludge to co-locate food waste facilities on the site, and do that outside their regulated business. There are a number of water companies who are now exploring that and have already built food waste digestion plants.

**Jenny Jones AM:** It is looking bigger, isn't it? Every time somebody speaks, it is looking as if we are going to have to do more work. We would expect recycling rates of all kinds to increase, wouldn't we, with time. I see, for example Mr Griffin that Hackney, in my figures, you have stalled, you have stagnated. I am just wondering if a food waste collection could actually improve your figures.

**Mark Griffin (Head of Waste Strategy, LB Hackney):** We do extensive food waste collection currently so, as I said, from street-based properties and estate-based properties. I think there is an issue about the intensity of that provision, not necessarily on street-based properties but on estates, going back to the point of making sure that residents have suitable facilities close to their premises and that they are encouraged to use them. That is the work we are doing now and particularly working with Hackney Homes and other registered providers, to get them to contribute to the communications that are required and the sort of ethos that is required in developments to try and ensure that they and residents regard the composting set up that we have as an amenity and not a nuisance.

**Jenny Jones AM:** Why have your figures stalled like this?

**Mark Griffin (Head of Waste Strategy, LB Hackney):** Do you mean stalled in terms of overall recycling performance or particularly --

**Jenny Jones AM:** Recycling and household waste sent for recycling or composting.

**Mark Griffin (Head of Waste Strategy, LB Hackney):** I think you will find that it is not only Hackney where there is that general stalling --

**Jenny Jones AM:** I know, but you are here.

**Mark Griffin (Head of Waste Strategy, LB Hackney):** That's right, I just want to put that into context, particularly when we are looking at where the gaps are. I have mentioned flats above shops, that is probably the only area within the authority where we don't offer a food waste collection service. We offer a dry recycling service across the board. It is about removing the barriers. We think we have done that recently by introducing same day collections, making it an integrated service, making it very clear in terms of what we are offering and what is expected in terms of how waste is to be presented. Making it as convenient as we can, time-banded collections for flats above shops alongside businesses. Tackling unregulated waste so that that waste doesn't, almost, interfere with the recycling figures is a particular target for us.

It is looking at every option open to us to remove the barriers. We think we are nearly there. We are unlikely to be able to reduce the frequency of residual waste collection given where we are as an authority with an inner London setting. It has obviously worked for other authorities elsewhere, so that is a particular difficulty to us. We will look at measures to restrict waste in terms of where there are clear excesses of waste being produced, and where there is a better balance to be found. The integrated service that we have at the moment should make that clearer, we can clearly see what is coming out in terms of our green sack collection for dry recyclables, what is coming out in terms of residual waste and the participation we have on street-based collections which is pretty good. We have an average of around 85 per cent participation on dry recycling.

On food waste for our street-based premises, it might be different for our estate-based premises, it is about 31 per cent that participate on food waste for street properties. At the highest, it is about 45 per cent and in those areas you will also have residents taking advantage of home composting as well. I think the low performance is in the main driven by the fact that our housing stock is still significantly split virtually 50/50 between street-based and estate-based property. We need to work harder at getting more from our estate-based premises, but it is not for the want of putting the facilities in.

We want to make sure we have our facilities in place. You can probably say we went borough wide in 2007, but we have improved the density provision since then. We think it is a long-term position and we are building the infrastructure hopefully to support that.

**Jenny Jones AM:** It has been suggested at other times that one of the barriers to better recycling and food waste projects is the fact that boroughs are locked into contracts with energy to waste companies, ie that there is almost a perverse incentive to generate waste so that you can fulfil your contract. Is that true for Hackney?

**Mark Griffin (Head of Waste Strategy, LB Hackney):** We are, as I said before, in a two-tier arrangement with the North London Waste Authority. The North London Waste Authority through London Waste Limited operate the Edmonton waste plant. I think there is a mix of treatment facilities required. It is not a disincentive to Hackney that we have that facility, we still have an extensive collection regime that supports recycling and residual waste. We need to make sure we don't over-rely on energy from waste. We need to have that balance.

I think it needs to be there to supplement our collection regimes because as an inner London authority it will be extremely difficult to get to the levels of 50 per cent recycling. Working in a partnership with North London Waste Authority and constituent boroughs with an inner and outer London mix makes that perhaps more achievable on a regional level; but not on a individual borough basis.

**Jenny Jones AM:** I have never actually seen the figures, what people think London could really achieve. We talk about 85 versus 15 per cent for other places where we don't have the same problems in density and flats and so on.

**Stephen Didsbury, Head of Waste and Recycling Services, LB Bexley:** I wanted to come back, first of all on the point about generally the recycling rate stalling. Some of that is to do with other successes and things such as the Courtauld agreement. As we heard earlier on packaging is actually making packaging waste lighter. Your glass bottle five years ago weighed significantly more than your glass bottle today. The same with plastic bottles, things moving from glass to plastic, plastic to pouches. In 2008 we had three newspapers delivered to every house in the borough. Now we don't have any, you come and collect them. That has been partly compensated by people bringing the *Evening Standard* home.

Waste is changing, so to stay still you actually have to collect more glass bottles than you did before just to stay in the same place. It is actually quite hard work even treading water, let alone moving forward.

I use a waste to energy plant at Belvedere, but our contract is that we only have to give them the waste we can't recycle or compost or reduce. So they are entitled to all the waste I can't treat in other ways.

**Jenny Jones AM:** But there is no limit that you can't fall below?

**Stephen Didsbury, Head of Waste and Recycling Services, LB Bexley:** No. If I have one tonne left, it has to go to them.

**Nicky Gavron AM:** Can I ask if you co-mingle your waste?

**Stephen Didsbury, Head of Waste and Recycling Services, LB Bexley:** We have a separate stream for paper, a separate stream for glass and a mixed stream for plastics and cans.

**Nicky Gavron AM:** And that is why you have such high rates of recycling, presumably?

**Stephen Didsbury, Head of Waste and Recycling Services, LB Bexley:** I would argue that, yes. But others may disagree, that it is so much easier to put it all in one bin. There is a difference of view and we can probably keep you here until midnight just discussing that one question.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** A very short comment about this question regarding the co-existence with the existing disposal incinerator capacities and separate collection schemes. Actually this is an argument ongoing in Lombardy, the region where Milan is located in. Lombardy has 10 million inhabitants and Milan has more than 14 per cent of the inhabitants of this region. The new regional waste management plan was licensed just two weeks ago and we were involved in that. What was done at regional level was, since separate collection at regional level is going to push up to 60 or 70 per cent of municipal solid waste arising, the decision at regional level was that the existing incinerators have been shared at regional level.

Actually the region is really managed as a unique authority, where all available disposal capacities are taken together. Which means if I have a lack of disposal capacity on the east side of Lombardy I am allowed to transport my waste - obviously my interest is to keep the waste low - but I can shift the waste to the other side of the county and dispose of it there. Because what is happening is that recycling rates are really creating an overcapacity of disposal facilities.

The other factor is the economical situation. The area around Milan lost around 12 per cent residual waste in about three years, both to recycling and to the economical situation. This makes the economical sensibility of incinerators and of managed landfills critical. It means that you have to raise the gate fees, basically. This is a difficult argument to deal with, with mayors, in my experience.

**Jenny Jones AM:** All those nice incinerators are going to be superfluous in just a few years' time, we won't need as many in the future.

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** I would say, from a technical point of view, on a regional level designing the necessity of disposal of waste would not be more than 20 to 30 per cent of the total waste production. Ten years ago, we would have said 50 per cent. 15 or 20 years ago, we would have said 70 per cent. And this is the point that you have to confront with long-term investment, which these incinerators or these kinds of facilities need.

**Jenny Jones AM:** I have a few more questions, I am going to try and gallop through them because I think we have covered some of the areas, but just in case nobody has come in. I wanted to know, Dr Ricci, what food waste processing mechanisms are the best value for money and environmentally, for an urban situation like London?

**Dr Marco Ricci (Consultant, Italian Composting and Biogas Association, CIC):** Good question. Just to be clear, since there was a discussion about AD and composting. AD is something new also for Italy. Roughly speaking, we have installed capacity of 4.5 million tonnes of composting and

500,000 tonnes per year of AD and composting. It is something new as it is in UK. What is best for areas like this? There is one point that has to be taken consideration, investment costs and environmental impacts. AD has the advantage compared to investment composting which is that it can guarantee larger treatment capacities in smaller surfaces.

That is why large composting plants in many parts of Europe have started to build also anaerobic equipment next to it. They have already composting capacities and to rise the plant capacities, that has been done also in that plant I was talking about. They have just realised also AD. The advantage is that it consumes less space, it is able to confine the most critical part of the process. The negative point is that it has higher investment costs. Roughly speaking it depends, from country specific in Italy, it is almost double. Of course, it is sustainable if you get revenues, subsidies, revenues for renewable energy. This is one of the aspects which makes the economical sustainability of AD plants more critical.

Just to give you a thumbnail for composting in Italy, the gate fee is between 60 to 80 euro per tonne and for AD it is almost the same but you need the subsidies for the energy. Without that it would be economically much higher, so probably unsustainable.

**Jenny Jones AM:** Thank you, that is really interesting and I am so glad that others were here to hear that.

I wanted to ask, don't feel you have to come in on this but I think everybody might want to say, but how can collection authorities in the industry all work together to actually come to some arrangement that suits everybody? It suits the residents, it suits the councils, it suits the investors. We need an infrastructure, Nicky and I are talking about having small AD plants in every new development, for example, in big new developments.

**Nicky Gavron AM:** Community ownership.

**Jenny Jones AM:** Yes. How can everybody work together to get that sort of thing, something that is actually socially environmentally and economically desirable?

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** I think, if I may first start on that, that one of the most important things from our members' points of view in building plants is to have long-term certainty over what end result we want to achieve. If the London Assembly were to say, "We want to achieve the situation where the vast majority of our food waste is recycled through anaerobic digestion so that we achieve the benefits that AD can deliver" then the industry can work much better with all the other parties involved to help resolve some of the many complexities that there are.

It is that clarity over the long-term direction that makes quite a big difference. When it is left to local authorities for their own individual choice, no one really knows what you want to end up with.



**Jenny Jones AM:** So it is subsidies, potentially. It is certainty.

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** Well, long-term certainty in the end results in less subsidies because you have that certainty of direction that you want to go. You have a bit more confidence in the longer term. Yes, you need subsidies in the short-term to get the industry off the ground, that is what happens for a relatively new sector. However, the subsidies have been coming down and longer certainty does reduce that finance cost.

**Linda Crichton (Head of Collections and Quality, Waste and Resources Action Programme):** I think the other point is really that there has been a significant amount of investment in AD across the UK. I think you would agree and I think we are probably up to about 1 million tonnes of capacity for AD. However, the collection infrastructure and the delivery of the food waste, food stock, perhaps has not developed at the same pace as the treatment infrastructure. I think that is one of the challenges we always have. It is the chicken and egg: do you develop the treatment capacity first and then hope that will be a pull through in terms of the feed stock? Because unless you have the treatment capacity, there is no incentive to collect the stuff if you don't have anywhere to treat it.

One of the areas that we have been looking at at the moment is how you can make maybe more connections between contractual arrangements for treatment and how you collect the stuff. So when Marco was doing his presentation, he emphasised the importance of liners. If you provide householders with liners as part of the collection service, that actually can have a very positive impact in terms of people's participation and how much waste they separate for collection. However, what we find is at the moment, given the financial constraints that local authorities are under, often the free provision of liners isn't part of the service.

If you could work with, for example, the treatment contractor to provide liners through the treatment contract then maybe there are ways of trying to join up the two a bit more to encourage better capture and better performance.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** I would just add, one of the things that LWARB has done to show leadership on this is to fund AD plants that haven't got the contracts in the first place. You have heard about this chicken and egg situation, we fund plants that don't have guaranteed minimum tonnages up front which find it very difficult, if not impossible, to attract bank debt. The TEG plant is an example of that, the Willen plant is another example, both without guaranteed minimum tonnages which - I am pleased to hear - are now attracting local authority waste to those facilities, as well as business waste.

Then the other side, which I think we have not talked about today, is the amount of business food waste there is out there. One of the things I hope that LWARB will be looking at in future is is there any way in which we can invest in businesses as opposed to projects and can we invest in businesses to be the deliverer of food waste to the projects that we have helped to create. That is something I hope we can look at in the future, to try and square this circle.

**Jenny Jones AM:** You see, you say that, "look at it in the future" but the future is pressing in on us, isn't it? Because there is an anticipated population growth here in London which is going to exacerbate all of our problems. I am just wondering if there is enough dialogue between the Government and industry about putting in the infrastructure and actually making it work. Because we need, I mean, there is going to be a lot of additional waste. However much we cut back, a larger population is going to generate more.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** We are developing our investment strategy now, so I am talking about rolling it out next year. It is not that much in the future. We are analysing the situation, talking to industry and thinking what the best use of our very limited, I have to say, resources are. Maybe get to the landfill tax question, by the way.

**Jenny Jones AM:** Yes. I am ploughing on, don't worry. We have covered the GLA owned sites, do you feel? Do you feel we have covered that?

**Nicky Gavron AM:** I didn't think we had any answers at all. We didn't get any answers.

**Jenny Jones AM:** Well, you answered it. Let me ask the question. What potential do GLA owned sites have to accommodate waste processing facilities such as the AD plant at the London sustainable industries park?

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):** There is significant potential, as I think is mentioned by colleagues. TEG is one of the first AD plants in London. We have another one coming on the Sustainable Industries Park which will begin construction towards the end of this summer. The whole ethos of the park in terms of promoting green infrastructure is something that has been incredibly positive for that area. It has had the support of the local authorities. I think we are able, as the GLA, to guide potential occupiers through the planning process where they may be going in cold in other areas. We can provide a framework to allow them to engage with local authorities given our relationship. We can also take positive measures through flexibility in terms of land receipt, so stage payment we can accept, conditional offers subject to planning offers. I think we are in a position of real strength on the Sustainable Industries Park to create an environment, to promote green business and green infrastructure. The two AD plants that are going to be operational by next year are testament to that. We also have another energy from waste business which has just secured planning permission, a gasification plant, which should begin construction later this year.

**Jenny Jones AM:** Do you still think that is a good idea, after what you have heard?

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):**  
Gasification?

**Jenny Jones AM:** No, the energy from waste plant.

**Nicky Gavron AM:** It is a gasification plant.

**Jenny Jones AM:** Oh, it is a gasification?

**Nicky Gavron AM:** What does it gasify?

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):** It takes general waste and turns it into electricity which can be fed back into the grid. I think what has been mentioned by colleagues is there is provision, there is capacity in the system for energy from waste. There are various ways of dealing with waste, but there is an element of energy from waste that will still be valuable.

**Jenny Jones AM:** There must be lots of competition for land use though, even within the Sustainable Industries Park.

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):** There is, yes. I think that is an important question. One of the interesting things about competition for those sites is that, as Wayne has mentioned, sometimes when a green business or someone looking to do an AD plant is trying to put the finance together to do something like that it is complicated, bank funding is hard to get hold of, and they are going up against traditional waste suppliers who have massive covenants, massive contracts with local authorities and are in a position to go in and buy land outright. There is a conflict there and it is one where the GLA can assist start-up businesses. The green sector in east London is still relatively young. I think we are in a position to be able to facilitate that and understand how the mechanics of the finance work so we can resist that competition and allow those industries a fair platform.

**Jenny Jones AM:** Okay. This is the last question on our list and it is the landfill tax question. How could the diminution of landfill tax to London Government make a positive impact on waste management in the capital?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** Well, I think the sum is probably around £40 to £60 million, something of that order. That would be a declining amount, but LWARB is not getting funded at all by Government anymore so we have to recycle money from our investments and we are looking to spend £20 million, £30 million over the five years between 2015 to 2020. Certainly something of that order, £40 or £60 million, can make a lot of difference in terms of investment in capital infrastructure for boroughs and putting in different collection schemes. Especially for harder to reach areas, in terms of communications which sucks up money, it is very difficult to justify a spend of money for local authorities because it is difficult to get accurate figures on how that is converted into tonnage, especially on behaviour change campaigns.

Then investment in infrastructure finally. We are competing with cheaper land outside London, so if we have a good deal in London to try and bring infrastructure into London, to have a fund of money would be an extremely useful thing.

**Jenny Jones AM:** So it would be very useful but it would decline over time?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** It would decline over time. We need to use it now, put it to good use and why not? This is mostly London money that is being spent by London businesses and London local authorities and it should come back to them.

**Jenny Jones AM:** And will it be ringfenced?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** It depends how it is --

**Jenny Jones AM:** But it can be ringfenced?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** I think it can be ringfenced, yes.

**Jenny Jones AM:** And it would make sense to ringfence it?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** Well, you can give it to LWARB, that would be ringfenced, wouldn't it?

**Murad Qureshi AM (Deputy Chair):** That's an interesting point, Wayne, you make about the cheaper land. I have seen waste facilities in central London moved to outer London, you are suggesting it is going to go further out.

**Nicky Gavron AM:** Chair, can I make the point that the Further Alterations to the London Plan at the moment is suggesting the release of industrial land. Industrial land is cheaper land, because it is a different use class order. It is all over London, though not in central London. Once it is gone, it is gone. That is where these SMEs, these secondary material economy, the waste, the AD, the composting, that is where some of it should be going. The larger ones.

**Murad Qureshi AM (Deputy Chair):** Just on that, how much of that is actually incorporated in the London Plan, William?

**Will Stewart (Principal Development Manager, Housing, Land and Property, GLA):** In terms of the industrial land being released? I think, as Nicky has pointed out, there is a debate at the moment about how that land is treated. It is a critical debate because you have competing requirements. We have a big housing pressure, some of that land is being earmarked for release for housing. Some of it where you have an AD plant proposal or a manufacturing proposal which might bring significantly higher levels of jobs, there is another competing element. It is an interesting debate, one which will go on, I think.

**Nicky Gavron AM:** Yes, but it is absolutely critical for London because - I just can't say it more strongly - we need to safeguard those sites for the future and for now, in fact, listening.

**Murad Qureshi AM (Deputy Chair):** Okay. The boroughs, do you want to say something about the landfill tax and how boroughs respond?

**Stephen Didsbury, Head of Waste and Recycling Services, LB Bexley:** The best way of looking at it is how successful it has been in Scotland and Wales and how much money they are putting in to collection schemes. They have set themselves a very high target and in Scotland I think it is around about £25- £26 million a year they are putting in to improving facilities and collection schemes which seeing as they have only two-thirds the population of London we would be talking about £40 or £50 Million for us. They are doing it year on year and from being a long way behind England then, Wales has already overtaken and I think Scotland is catching on very rapidly.

I think earlier we said it was stagnating which is because the political pressures are there. However, in Scotland their targets are very high. They are saying you have to have separate food waste collections, but then the Scottish Government is using this money to invest in separate food waste collections. Then there are bans on things going into the sewer, which we talked earlier about, putting things in sinks, and bans on mixing things. So they are pushing from the regulatory side but they are doing carrot and stick: here is the money, get on and do it and if you don't do it there is going to be issues.

I think that is probably the most concluding factor. It is not going to be so easy for us because obviously in Scotland and Wales the landfill sites are all in Scotland and Wales. Most of our waste, which is going to landfill, is not going to landfill in London so it would have to be a lot more interesting discussion with central Government about how we could get our share of the landfill money back.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** Londoners are paying it.

**Stephen Didsbury, Head of Waste and Recycling Services, LB Bexley:** Londoners are paying, but it is not being paid in a site in London whereas most of the waste going to landfill in Scotland goes to landfill in Scotland. It is the same with Wales. It is a lot easier to know where you draw the line when, you know, some of ours is going to landfill in Bedfordshire and other places north-west and south of London.

**Mark Griffin (Head of Waste Strategy, LB Hackney):** I just wanted to make a point about hopefully not missing the opportunity with the regeneration that is happening within London, particularly within Hackney, with new households being developed, particularly in high rise blocks as we can see now. We need to link the planning process all the way through, but additional money is required, as I think Wayne said, to make sure that we have an opportunity. Those properties are being

occupied for the first time, new residents are moving in. Hopefully we have ensured that those developments do provide adequate waste facilities for dry recyclables, for food, for their residual waste.

I would like to see that we are able to support that at that time, because I fear that we could potentially lose that opportunity if we don't have some intensive communications, perhaps more than we do at the moment with just our door knocking when we perhaps have something to say. I think we need to be more intensive in terms of ensuring that properties start on the right footing with new residents moving into them.

**Len Duvall AM:** Can you give me any examples of where either London-wide or at local level you have influenced the planning committee, any of your colleagues, it doesn't have to be in your boroughs, where they have influenced the planning committee on a new design to get exactly what you have said? It doesn't have to be in Hackney, does it happen in others that you have heard of?

**Mark Griffin (Head of Waste Strategy, LB Hackney):** It happens through our waste plan and guidance where there is support between the waste team and planning officers. I think it is the technical challenges you heard earlier about closing of chutes and on some blocks that is quite appropriate. But we are being surrounded by 30, 40, even 50 storey blocks, some residential. There needs to be some practical measures to work with residents to give them a convenient way to present their waste.

We have had examples of working with particular architects and, presented with that challenge, it has perhaps been surprising for me to not see those architects - some world-renowned architects - coming back with good ideas. It is almost as if they are hearing for the first time what we expect from them in a residential development in Hackney, albeit a very high-end development perhaps but 30 and 40 storeys high.

There are more of them and I wouldn't want to lose the opportunity of working with them, not only on a practical infrastructure basis but with the residents as well and continuing that through when they have been there, you know, six months or a year.

**Len Duvall AM:** Okay. Just going back to the issue about capacity and population growth, the recent Imperial College study estimated X million tonnes of infrastructure required. Is that something shared by you, Wayne, and by your colleagues, that is what London needs?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** We are doing some work with the GLA on capacity now and LWARB has helped feed into the infrastructure investment plan which hopefully will be published for consultation soon. All of that has been taken into account. We do think there is going to be a capacity gap, but we do think as well that with the kind of recycling and reuse levels that Europe expects and the direction of travel that the world is going into we should start to transition into something called the circular economy and that means designing waste out, using waste as resources, not destroying things that we could reuse and

remanufacture. It is a different kind of infrastructure.

That is the kind of plan and the thinking that is going into what London should be, maybe the generation of capacity after the current generation. Therefore I suppose the answer is yes and doubly so, because we are thinking what do we need now, what do we need in 20, 30, 40 years hence.

**Len Duvall AM:** In the short-term, just to get it clear in my mind, London is going to rely on the plants that you said that are going to come onstream next year and the plants outside London, Greenwich I think uses one in Sittingbourne. I might have that wrong, something like that, to meet London's capacity until we get agreement to get the step change or the resources that you need to bring it up further. Is that the crux of it?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** We need more capacity in London, we need more capacity around biological treatment capacities as we have discussed today. We need more recycling sorting capacity and we also need more reprocessing capacity so these are the kind of things that London needs. We don't need any more, I would suggest, incineration capacity but we do need more waste treatment capacity because the industry is moving from a disposable culture to a reusing and recycling culture. There is a capacity gap, and I think it is around treatment and reprocessing.

**Len Duvall AM:** Okay. Where in your priority of needs then on food waste, where would this fit in against recycling? If you had a choice, if I emptied my wallet out in front of you and said - not my wallet - if I had the power to do that, where would you put your energies as a priority in terms of is it this area versus another area? You mentioned you had limited resources, what would you do? Or do you have to do both?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** We have to do both.

**Len Duvall AM:** Okay.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** There is actually a quite neat thing happening here. There is quite a lot of Materials Recovery Facility (MRF) capacity in London, but the MRF capacity, the processing capacity technology probably needs to be improved to increase the sorting potential. We can do that reasonably cheaply without building new facilities. However, for the AD and the composting stuff, we need probably new facilities. That is going to be more expensive.

**Len Duvall AM:** On the question of leadership you said earlier on, if we choose leadership in the wider sense and the various strategies we have - and I have read some of the strategies and all the rest of it - are we anywhere near getting to where we need to be in the timescales that we need to work on if we are going to make a real difference?

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** No, we need to move faster and further.

**Len Duvall AM:** Fine. Okay. Is that shared by the rest of your colleagues? Just nods.

**Linda Crichton (Head of Collections and Quality, Waste and Resources Action Programme):**

Yes, I would agree. I think it needs emphasis on both the recycling material stream and the food waste if you want to achieve the objectives that have been set for London. You have to focus on both. Particularly when it comes to food waste, there has to be some further incentives to support the extension of the collection arrangements by some form of pump priming or whatever of the initial costs of putting in that infrastructure. If you want to achieve the targets in the Mayor's strategy.

**Charlotte Morton (Chief Executive, Anaerobic Digestion & Biogas Association):** If I can just add one point. I think it is really important for people, the population as a whole, to understand why they are segregating their food waste and what the benefit is to them. AD as an industry is capable of producing about 10 per cent of the UK's domestic gas demand, and we are at a situation at the moment where The Department of Energy and Climate Change thinks we are at the risk of lights going out next year. This is not just about this is the right thing to do, it is also about solving some quite urgent issues today.

Another issue that has not been discussed but is another massive benefit, which particularly affects London, is air quality. We as a renewable sector produce a renewable gas and bio methane is particularly useful, particularly strategically useful, in a way that is different from other renewables that produce electricity. The renewable gas that we produce can be used in HGVs in London, helping to mitigate the air quality issues we have.

If people who are being asked to separate out their food waste can understand exactly what happens to it, which is not the case in most London boroughs as I understand it - certainly not in mine - that would probably improve the rates as well.

**Wayne Hubbard (Chief Managing Officer, London Waste and Recycling Board):** And we have not talked about oil, vegetable oil, and the potential that has for transport fuels either.

**Len Duvall AM:** So there might well be some further questions that we need to follow-up and write to you further to get additional information.

**Murad Qureshi AM (Deputy Chair):** We will do that with our panel of expert witnesses. Thank you for coming to an end and making the points about going faster and further and how circular some of these issues are if we link it up with energy use as well.

Can I, again, thank you very much for your wisdom this afternoon and particularly Marco for the two presentations and telling us what is happening across Europe, as well as in Milan, which we can look at as a guidance for the direction London needs to take in the future. Thank you very much for your



time and energy this afternoon. Thank you.