

AGENDA

Meeting	Environment Committee
Date	Thursday 23 June 2011
Time	10.00 am
Place	Chamber, City Hall, The Queen's Walk, London, SE1 2AA

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Members of the Committee

Murad Qureshi (Chair)
Darren Johnson (Deputy Chair)
Gareth Bacon
James Cleverly
Roger Evans
Nicky Gavron
Mike Tuffrey

A meeting of the Committee has been called by the Chair of the Committee to deal with the business listed below. This meeting will be open to the public. There is access for disabled people, and induction loops are available.

Mark Roberts, Executive Director of Secretariat
Wednesday 15 June 2011

Further Information

If you have questions, would like further information about the meeting or require special facilities please contact: Dale Langford, Committee Officer; telephone: 020 7983 4415; email: dale.langford@london.gov.uk; Minicom: 020 7983 4458.

For media enquiries please contact Lisa Moore, Tel: 020 7983 4228, email: lisa.moore@london.gov.uk or Julie Wheldon, Tel: 020 7983 4228, email: julie.wheldon@london.gov.uk.

If you have any questions about individual reports please contact the report author whose details are at the end of each report.

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Certificate Number: FS 80233

**Agenda
Environment Committee
Thursday 23 June 2011**

1. Apologies for Absence and Chair's Announcements

To receive any apologies for absence and any announcements from the Chair.

2. Declarations of Interests (Pages 1 - 2)

The Committee is recommended to:

- (a) Note the list of memberships of functional bodies and London Borough Councils, as set out in the table at Item 2;**
- (b) Note the gifts and hospitality received by Members, as set out on the Authority's gifts and hospitality register; and**
- (c) Declare any other personal or personal prejudicial interests in specific items listed on the agenda over and above those items listed in the table at Item 2 and including any interests arising from gifts or hospitality received within the previous three years or from the date of election to the London Assembly, whichever is the later, which are not at the time of this meeting reflected on the Authority's register of gifts and hospitality.**

3. Minutes (Pages 3 - 50)

The Committee is recommended to confirm the minutes of the meeting of the Environment Committee held on 19 May 2011 to be signed by the Chair as a correct record.

The appendices to the minutes set out on pages 9 to 50 are attached for Members and officers only but are available from the following area of the GLA's website:

<http://www.london.gov.uk/who-runs-london/the-london-assembly/committees/environment>

4. Summary List of Actions (Pages 51 - 52)

Report of the Executive Director of Secretariat

Contact: Dale Langford, dale.langford@london.gov.uk, 020 7983 4415

The Committee is recommended to note the outstanding actions arising from previous meetings of the Committee.

5. The Environmental Legacy of the Olympic Park (Pages 53 - 56)

Report of the Executive Director of Secretariat

Contact: Ian Williamson, ian.williamson@london.gov.uk, 020 7983 6541

The Committee is recommended to note the report as background to hearing from and putting questions to invited guests.

6. Update on a Possible Inner London Clean Air Zone (Pages 57 - 58)

Report of the Executive Director of Secretariat

Contact: Richard Derecki, richard.derecki@london.gov.uk, 020 7983 3899

The Committee is recommended to note the report as background to discussing with expert guests the feasibility of a Clean Air Zone in inner London.

7. Electric Vehicles (Pages 59 - 62)

Report of the Executive Director of Secretariat

Contact: Carmen Musonda, carmen.musonda@london.gov.uk, 020 7983 4351

The Committee is recommended to note the report as background to the public briefing session to be held on 12 July 2011.

8. Rapporteur Review of the Removal of Vegetation from Railway Embankments (Pages 63 - 64)

Report of the Executive Director of Secretariat

Contact: Richard Derecki, richard.derecki@london.gov.uk, 020 7983 4899

The Committee is recommended to recommend to the Business Management and Administration Committee the appointment of Darren Johnson AM as a rapporteur to review guidelines for the removal of vegetation from railway embankments, with the term of reference set out at paragraph 4.2 of the report.

9. Waste Financial Reward and Compulsory Recycling Schemes (Pages 65 - 104)

Report of the Executive Director of Secretariat

Contact: Carmen Musonda, carmen.musonda@london.gov.uk, 020 7983 4351

The Committee is recommend to agree the report, *Carrots and Sticks: a review of waste financial and compulsory recycling schemes.*

The appendix to the report set out on pages 67 to 104 is attached for Members and officers only but is available from the following area of the GLA's website:

<http://www.london.gov.uk/who-runs-london/the-london-assembly/committees/environment>

10. Energy Bill (Pages 105 - 108)

Report of the Executive Director of Secretariat

Contact: Ian Williamson, ian.williamson@london.gov.uk, 020 7983 6541

The Committee is recommended to note the submission in relation to the Energy Bill prior to its Second Reading in the House of Commons, agreed under delegated authority by the Chair, in consultation with party Group Lead Members.

11. Response to the Mayor's Air Quality Strategy (Pages 109 - 114)

Report of the Executive Director of Secretariat

Contact: Ian Williamson, ian.williamson@london.gov.uk, 020 7983 6541

The Committee is recommended to note the Committee's response to the final version of the Mayor's Air Quality Strategy, agreed under delegated authority by the Chair, in consultation with party Group Lead Members.

12. Environment Committee Work Programme 2011/12 (Pages 115 - 118)

Report of the Executive Director of Secretariat

Contact: Ian Williamson, ian.williamson@london.gov.uk, 020 7983 6541;

Carmen Musonda, carmen.musonda@london.gov.uk, 020 7983 4351

The Committee is recommended to note its work programme for 2011/12, as outlined in paragraphs 4.1 to 4.9 of the report.

13. Date of Next Meeting

The next meeting of the Committee is scheduled for Tuesday 12 July 2011 at 10.00 am in the Chamber.

14. Any Other Business the Chair Considers Urgent

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London Assembly

Membership of Functional Bodies and London Borough Councils

Member	(Personal) Interest
Gareth Bacon	Member, LFEPA; Member, LB Bexley
James Cleverly	Member, MPA; Member, LDA
Roger Evans	Member, LB Havering
Nicky Gavron	
Darren Johnson	Member, LFEPA; Member, LB Lewisham
Murad Qureshi	Member, LFEPA
Mike Tuffrey	Member, LFEPA

[Note: LB - London Borough; LDA – London Development Agency; LFEPA – London Fire and Emergency Planning Authority; MPA – Metropolitan Police Authority.]

Recommendations:

- (i) That the list of memberships of functional bodies and London Borough Councils, as set out in the table above, be noted;
- (ii) That gifts and hospitality received by Members, as set out on the Authority's gifts and hospitality register, be noted; and
- (iii) That all Members declare any other personal or personal prejudicial interests in specific items listed on the agenda over and above those items listed in the table above and including any interests arising from gifts or hospitality received in the previous three years or from the date of election to the London Assembly which are not at the time of this meeting reflected on the Authority's register of gifts and hospitality.

The above memberships of the GLA's Functional Bodies and London Borough Councils are listed for the purposes of public transparency. However, Members should note that in accordance with the GLA's Code of Conduct, they must declare any other **personal interests** (except interests arising from gifts and hospitality that appear on the gifts and hospitality register at the time of the meeting) they have in any item on the agenda or as they arise during the course of the meeting. Members must say to which item their interest relates. If they have a personal interest Members must also consider whether or not that interest is a **prejudicial personal interest** and take the necessary action. When considering whether or not they have a declarable interest, Members should consult paragraphs 8-12 of the Code.

A **personal interest** is, generally, one that would affect a Member (either directly or through a connection with a relevant person or organisation) more than other people in London, in respect of the item of business under consideration at the meeting.

If a member of the public, knowing all the relevant facts, would view a Member's personal interest in the item under consideration as so substantial that it would appear likely to prejudice the Member's judgment of the public interest, then the Member has a **prejudicial personal interest**.

The Code of Conduct also specifically requires Members, where considering a matter which relates to or is likely to affect a person from whom they have received a gift or hospitality with an estimated value of at least £25 within the previous three years or from the date of election to the London

Assembly, whichever is the later, to disclose the existence and nature of that interest at any meeting of the Authority which they attend at which that business is considered.

The obligation to declare any gift or hospitality at a meeting as a personal interest is discharged, subject to the proviso set out below, by registering gifts and hospitality received on the Authority's on-line database. The on-line database may be viewed here: <http://www.london.gov.uk/gifts-and-hospitality-register>. At Assembly meetings, under the declarations of interest agenda item, Members are then asked to note that gifts and hospitality received by Members are set out on the Authority's register.

If any gift or hospitality received by a Member is not set out on the on-line database at the time of the meeting, and under consideration is a matter which relates to or is likely to affect a person from whom a Member has received a gift or hospitality with an estimated value of at least £25, Members are required to disclose these at the meeting, either at agenda Item 2 or when the interest becomes apparent.

It is for Members to decide, in light of the particular circumstances, whether an interest arising from the receipt of a gift or hospitality is also a prejudicial personal interest. Where receipt of a gift or hospitality does give rise to a prejudicial interest the Member must withdraw from the room and not seek to improperly influence any relevant decision.

Consequences: If a Member has a **personal interest**: they must declare the interest but can stay, speak and vote. If the Member has **prejudicial personal interest**: they declare the interest, cannot speak or vote on the item and must leave the room.

MINUTES

Meeting: Environment Committee
Date: Thursday 19 May 2011
Time: 10.00 am
Place: Chamber, City Hall, The Queen's Walk, London, SE1 2AA

Copies of the minutes may be found at:

<http://www.london.gov.uk/who-runs-london/the-london-assembly/committees/environment>

Present:

Murad Qureshi (Chair)
Darren Johnson (Deputy Chair)
Tony Arbour
John Biggs
James Cleverly
Roger Evans
Mike Tuffrey

1. Apologies for Absence and Chair's Announcements (Item 1)

- 1.1 Apologies for absence had been received on behalf of Gareth Bacon AM, for whom Tony Arbour AM attended as a substitute, and from Nicky Gavron AM, for whom John Biggs AM attended as a substitute.

2. Declarations of Interests (Item 2)

2.1 **Resolved:**

- (a) **That the relevant Members' declaration of memberships of Functional Bodies and London Borough Councils, as set out in the table at Item 2 on the agenda, be noted as personal interests;**
- (b) **That Tony Arbour AM's membership of the London Fire and Emergency Planning Authority, Metropolitan Police Authority and the London Borough of Richmond upon Thames be additionally noted as personal interests;**

- (c) That James Cleverly AM's role as Chair of the London Waste and Recycling Board, as declared under Item 8 on the agenda, be additionally noted as a personal interest; and
- (d) That the gifts and hospitality received by Members, as set out on the Authority's gifts and hospitality register, be noted.

3. Membership of the Committee (Item 3)

3.1 Resolved:

That the following membership and chairing arrangements for the Committee, agreed by the Annual Meeting of the Assembly on 4 May 2011, be noted:

Murad Qureshi (Chair)
Darren Johnson (Deputy Chair)
Gareth Bacon
James Cleverly
Roger Evans
Nicky Gavron
Mike Tuffrey.

4. Terms of Reference (Item 4)

4.1 Resolved:

That the following terms of reference of this committee, as agreed by the Annual Meeting of the Assembly on 4 May 2011, be noted:

1. To examine and report from time to time on –
 - the strategies, policies and actions of the Mayor and the Functional Bodies
 - matters of importance to Greater London as they relate to the environment and sustainable development in London.
2. To examine and report to the Assembly from time to time on the Mayor's Air Quality, Biodiversity, Climate Change Adaptation, Climate Change Mitigation and Energy, Noise and Waste Strategies, in particular their implementation and revision.
3. To consider environmental matters on request from another standing committee and report its opinion to that standing committee.

4. **To take into account in its deliberations the cross cutting themes of: the health of persons in Greater London; and the promotion of opportunity.**
5. **To respond on behalf of the Assembly to consultations and similar processes when within its terms of reference.**

5. Standing Delegations (Item 5)

5.1 Resolved:

That the current standing delegation of authority to the Chair of the Committee as noted by the Annual Meeting of the Assembly on 4 May 2011, be noted, namely:

“Delegate authority to the Chair, following consultation with the other Members of the Committee, to respond on its behalf to consultations where it is consulted on issues where there is not sufficient time consider the consultation at a full Committee meeting.”

6. Minutes (Item 6)

6.1 Resolved:

That the minutes of the meeting of the Environment Committee held on 6 April 2011 be signed by the Chair as a correct record.

7. Summary List of Actions (Item 7)

7.1 The Committee received the report of the Executive Director of Secretariat

7.2 Resolved:

That the outstanding action arising from the meeting of the Committee on 6 April 2011, be noted.

7.3 In accordance with Standing Order 2.2D, the Chair announced that he would vary the order of the agenda to take Item 8 after Item 11.

8. The Environmental Legacy of the Olympic Park (Item 9)

8.1 The Committee received the report of the Executive Director of Secretariat

8.2 Resolved:

That it be agreed to carry out an investigation into the environmental legacy of the Olympic Park, with terms of reference as set out in paragraph 4.1 of the report.

9. An Update Report on London's Street Trees (Item 10)

9.1 The Committee received the report of the Executive Director of Secretariat

9.2 Resolved:

That the report, *Branching Out: the future for London's street trees*, be agreed.

10. Environment Committee Work Programme 2011/12 (Item 11)

10.1 The Committee received the report of the Executive Director of Secretariat.

10.2 The Chair remarked that, following the long period of dry weather affecting London and the South East, the Committee would keep under review the issue of drought and if necessary invite Thames Water to a meeting.

10.3 Resolved:

That the work programme for 2011/12, as outlined in paragraphs 4.1 to 4.8 of the report, be agreed.

11. London's Energy Gap (Item 8)

11.1 The Committee received the report of the Executive Director of Secretariat

11.2 The following guests attended the meeting to answer the Committee's questions on London's Energy Gap:

- Alastair Tolley, Head of Renewable Energy, Association of Electricity Producers;
- Richard Rigg, Project Director, London Array;
- Peter Daw, Policy and Programmes Manager, Climate Change Mitigation, Greater London Authority (GLA);
- Wayne Hubbard, Head of Business Development, London Waste; and
- Ross Hudson, Environment Programme Officer – Low Carbon Zones, GLA.

- 11.3 A transcript of the discussion is attached as **Appendix 1**.
- 11.4 The presentation on the London Array given by Richard Rigg is attached as **Appendix 2**.
- 11.5 During the course of the discussion, the Chair welcomed pupils and staff from Park Walk Primary School in Chelsea.
- 11.6 **Resolved:**
- That the report and discussion be noted.**

12. Date of Next Meeting (Item 12)

- 12.1 The next meeting of the Committee would be held on 23 June 2011 at 10.00 am in the Chamber.

13. Any Other Business the Chair Considers Urgent (Item 13)

- 13.1 There was no other business.

14. Close of Meeting

- 14.1 The meeting ended at 11.57am

Chair

Date

Contact Officer: Dale Langford, Committee Officer; telephone: 020 7983 4415; email: dale.langford@london.gov.uk; Minicom: 020 7983 4458

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Environment Committee**19 May 2011****Transcript of Item 8: London's Energy Gap**

Murad Qureshi (Chair): Can I welcome our expert Panel; Richard Rigg from London Array and Alastair Tolley from the Association of Electricity Producers. We have also got Peter Daw, with whom you may be familiar. He is on the Climate Change Mitigation team at the GLA. We have got Wayne [Hubbard] from the GLA as Head of Business Development at the London Waste and Recycling Board and we also have Ross Hudson, Environment Programme Officer, from the Low Carbon Zone programme at the GLA. Thank you very much for coming along this morning.

I am going to kick off with a few questions and then we will go into a presentation from London Array from Richard which will begin the discussion on whether renewables can plug the gap. Let's firstly establish that there is a gap in the first place. The first time I came across that was when reading the Mayor's Climate Change and Energy Strategy over Christmas in a very bleak winter. Can I ask the GLA officers to set out for us your understanding of the size of the UK's energy gap now and the projection out to 2020? Let's start on that before we come to the London context please.

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): Thanks, Chair. It sounds like your Christmas was almost as exciting as mine then if you were heavily involved in that. I will just set out what we did in the Energy Strategy, the reason we did it and what we were trying to achieve.

The first important point to make is the illustration we use in the Energy Strategy. When we were talking about the energy gap it was based on electricity only so the illustration we used was electricity rather than energy as a whole. What we were really trying to do was to emphasise the risks of an electricity gap emerging in the future. That was the purpose of what we were trying to do within the Strategy.

Now why were we trying to establish that? Firstly, it was to emphasise to Government the importance of delivering the infrastructure that the country needs to continue to generate the electricity to meet demand going forward. It was, secondly, to illustrate the importance of our own programmes which are all demand side related, so the importance of reducing our need to use the National Grid and electricity from the National Grid. That is really the context for the work we undertook.

Now how did we go about this? We asked GLA Economics, in the first place, to look at the Department of Energy and Climate Change (DECC) peak demand forecasts going forward for electricity and also look at the National Grid seven year plan statement which sets out infrastructure coming on line.

The starting point is using DECC peak demand and taking into account infrastructure that is due to go off line over that period, a gap begins to emerge of 43 terawatt hours by 2015/16. That is largely due to the closure and decommissioning of nuclear plant and, also, the implementation of the new large combustion plant directive in that period of time.

The picture is slightly more complicated than that so we then took account of plant that had planning permission or was being constructed over that period of time. When you factor that into the equation that gap reduces from 43 terawatt hours to 30 terawatt hours by 2015.

Over and above that, National Grid estimates include a further 31 gigawatts of electricity capacity planned over that same period but with no planning consent, so projects in the early development stage.

Taking all that into account in fact there is a very slight surplus in terms of electricity demand United Kingdom (UK) wide. We thought it was quite reasonable to assume some delay in some of the build out of some of that kit and also a drop out of some of the plans which were yet to receive planning application or were still in development. We applied a 10% delay factor in projects which were in the pipeline and had received planning permission and a 25% drop out rate for projects which were pre-planning.

With that in mind we then extrapolated the position forward to 2020 on the build out rates which we had in the seven year plan and that gives a gap of 7.5 gigawatt hours nationally by 2020. We are really trying to capture the importance of infrastructure in the system or in the early stages of development being delivered. Also the importance, from our perspective, of the programmes that were operating in reducing demand to alleviate that problem.

Murad Qureshi (Chair): OK, Peter. Thanks for giving us some idea of the methodology you adopted to get to the national figures. How did you apportion the energy gap for London? I saw a figure of 500,000 megawatts per hour by 2020. That is probably the second stage of your analysis.

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): That is right. 576,000 megawatt hours by 2020. That was based on the electricity share London has nationally. We just apportioned a London share of that national figure.

Murad Qureshi (Chair): OK. Does the Association of Energy Producers agree with that analysis?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): Let me explain. For us, the issue of an energy gap has been around for a while. Clearly we do not have one at the moment - the lights are still on - but it is a national issue. We have got this integrated transmission system so generation anywhere in the country can serve demand anywhere in the country. London is a good example of somewhere relying on generation elsewhere. Its local generation capacity is a lot less than its demand.

We have got a number of issues/challenges for us in the industry. First of all we have got a lot of plant closing. As we heard we have got coal plant closing in the next couple of years because of environmental legislation. Nuclear plant that is going to close as it gets old - and by 2025 all but one of our nuclear plants will have closed. Then we have got probably more coal and gas plant closing by the early 2020s because of new environmental legislation that is going to kick in from Europe. That is the first problem; we have got to replace that to keep the lights on.

The second problem is that we have got to decarbonise our electricity industry. There are some very ambitious targets to cut carbon dioxide (CO₂) emissions but also to increase renewable electricity generation to 15% of energy by 2020, which is about 30% of electricity compared to about 7% today. We have got to go even further in the decade after that because the Committee on Climate Change - the Government's advisory body on climate change - wants us to decarbonise the industry by 2030.

On top of that we have got probably increasing demand for electricity because electricity is going to be used more and more to help decarbonise other energy sectors like transport and heat through heat pumps and electric heating and electric vehicles. All this adds up to a lot of investment in new types of the plant, so renewables, new nuclear, carbon capture and storage - a new technology to get rid of the carbon emissions from fossil fuel generation - and gas-fired plant which will be necessary to cover the times when the wind is not blowing. It is a lot of investment. Nationally you are looking at £200 billion in the next decade in our energy sector - about £120 billion of that in generation. Then you have got even more in the decade beyond that. We have got this really significant challenge.

Companies do want to invest and, as we have heard, there is already plant under construction. There is quite a substantial pipeline of projects that have either got planning consent, in planning or have been

proposed, but to unlock that investment what companies need is certainty, long term certainty, and stability in the energy policy and in the energy market. At the moment we do not really have that because, in order to try to facilitate the sorts of investments that we are doing, the Government has decided to review the electricity market with the aim of reforming it. While that is welcome, while we wait for the outcome of that and the certainty that will provide - which should, hopefully, come with a White Paper this summer - a lot of investment decisions are on hold.

The other thing we need to unlock investment is money, quite simply. You cannot rely on a very small handful of companies to make that size of investment. We have got to attract new sources of finance. Part of the point of these reforms is to make the UK more attractive to global finance, but that has yet to be seen I think.

As an industry we are very conscious of this risk. We are planning to avoid it by investing in new plant. What we do is make and sell electricity but what it requires is for the Government to give us the certainty and stability we need to invest.

Murad Qureshi (Chair): To respond to that, it is interesting this week we have had the coalition Government come up with the fourth carbon budget. It is broadly consistent with the previous Government. It has not said how it is going to implement it; it has just set the targets and we will hear that later on in the year. Does that not give you sufficient security in terms of where the national picture is going and how it affects --

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): We know in terms of decarbonisation where the national picture is going but we do not have any, at the moment, certainty in the long term about carbon prices which will underpin investment. We do not really know what is going to happen to electricity prices because we are creating a very different sort of market in which you will have very spiky and 'troughy' prices because there will be times when the wind is blowing and times when the wind is not blowing. If, for example, you wanted to invest in a gas fired plant - which is traditionally the cheapest and quickest thing to build - you are going to put a lot of money into that and it is going to be around for several decades, you want to know now that you are going to get your money back. If you cannot know how that plant is going to operate beyond 2020 because you do not know what the picture is in terms of the market, then you are not going to make that investment.

Murad Qureshi (Chair): Could you also give us some indication of the £200 billion investment that the industry thinks is required to keep up with the demand levels and what effect that is likely to have on energy prices? The bottom line is Londoners have been hit by one price hike already at the beginning of the year and there is going to be a second one later on in the year which is already being absorbed within inflation figures at the Bank of England. Most of it is going to be raised on energy prices which people are going to pay to get the investment done. You are not going to get public subsidies are you?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): Yes, the subsidy will have to be recovered from somewhere. I think, in its recent report on renewables, the Committee on Climate Change said that to support renewables to 2020 would add two pence a kilowatt hour to the price of electricity which translates to about £50 to £60 on a household bill. It also said that that could be offset by domestic energy efficiency measures. We are very conscious of the cost to consumers and cost effectiveness and keeping the cost down has got to be key to all this, but there will have to be some way of delivering this investment and someone has got to pay for it.

Murad Qureshi (Chair): Alastair, just so you are aware, we have already looked at the demand side through the Mayor's Office, so we are not going to be concentrating on that today. It is just the supply side this morning.

Finally I will ask the industry if the figure for London is one that you broadly agree with and does London have any particular problems? You said we do not export energy; we import it. Apart from that, are there any other considerations we should take on board?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): I have not done my own calculations on the figure but based on a share of national demand then I am sure that is reasonable. I suppose what is important for London is to make sure that it is playing its role in making the UK an attractive place to invest in energy. There are lots of opportunities for London in terms of jobs, skills and the finance community here and making use of the opportunities that exist for local generation which will mainly fall, I imagine, on the heat side because this renewables target is not just an electricity one; it is an energy one. That is going to require decarbonisation and renewables in the heat sector and also the transport sector.

Mike Tuffrey (AM): Some factual questions. Peter, in terms of the projections, what did you assume in terms of growth of demand in coming up with this gap?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): The growth was based on UK projections. I do not have them to hand. It is the DECC projections going forward of an electricity peak.

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): The Office of the Gas and Electricity Market (Ofgem) puts forward - I forget the paper - a fairly steady and low increase over that period on current peak electricity demand.

Mike Tuffrey (AM): It is a national figure?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): It is a national figure.

Mike Tuffrey (AM): If London was growing faster than the rest of the country that just gets averaged out? OK. My second question was this gap of 576,000 megawatt hours. What is that in terms of a typical - not that there is a typical - power station?

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): Alistair might correct me but it is not a huge gap. The important thing to note is that this is an illustration. All we are really trying to demonstrate is that this risk exists. Kingsnorth, for example, is many times bigger than --

Mike Tuffrey (AM): Kingsnorth. That is the big coal one.

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): Yes. That would be six or seven terawatt hours it can generate a year. Something like that.

Mike Tuffrey (AM): Then a question for Alistair: in terms of the size of that gap, if that is not even one power station, should we be alarmed at that gap? What does that gap say to you as an electricity producer? That calculated gap. That notional gap.

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): We can run these figures a number of ways. It is entirely dependent on what assumptions you make about what is going to come on and what type of electricity generation you are going to get. From a national perspective it is right to be cautious and right to be concerned.

If the point were just keeping the lights on, if it were, "We've got to invest to replace the plant that is closing" that is not so demanding financially and the industry can probably deliver that. When you add on the other things, the decarbonisation, it becomes more of a challenge. That is the point.

Mike Tuffrey (AM): The real London gap is the gap between what we generate in London - which is diddly squat because it is a city and not a place where you build a power station, although we used to have power stations along the Thames - and what we need. That is the big gap so this notional gap is

our share of a national gap. Nonetheless, it is helpful for folks in the debate. I wanted to get some sense of how big a risk London is at if Government does not sort this out.

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): The important point there is that gap we have illustrated is an assessment of a number of things which are yet to be funded anyway, so we are saying that is a portion of the number of things that are yet to be funded. You could argue that in fact the gap is all of that because none of that is, as yet, funded.

Mike Tuffrey (AM): London's share of the national gap is bigger. Yes, absolutely. That is helpful. Thank you, Chair.

Murad Qureshi (Chair): Are there any more questions on the size and the nature of the energy gap in London? No? OK. Can we move on to plugging the gap and whether renewables can do that? We are going to start this section of the discussion with a presentation from Richard [Rigg] about the London Array scheme - the wind farm in the Thames Estuary. I just hope you are plugged up as well and that your presentation will go live!

Richard Rigg (Project Director, London Array): Chair, I hope so! Let's see how it goes across. The very first slide I am afraid has a couple of glitches and I think it is to do with City Hall electronics, rather than the presentation. We are missing the DONG and Masdar's logos.

London Array is a consortium of these three companies; DONG Energy, with 50%, a Danish company and E.ON, 30%. -the link there to the UK is that they bought Powergen and Powergen was one of the original members of this project. The Masdar initiative from Abu Dhabi with 20%. My role in this, as Project Director I do not work for any of those companies; I am an independent. Of course that means my focus is on this project and I am not involved in the politics of the various companies etc.

I thought it would be useful, bearing in mind the topic today, to have a quick look at the Crown Estate's involvement in offshore wind and the various rounds of offshore wind so far and in the future. Round 1 was really the trial round. Small wind farms, generally ten square kilometres, 30 turbines, though some of them were combined to make rather larger wind farms. All of them are very close to shore.

Round 2 - and London Array is a Round 2 project - introduced much larger wind farms. London Array will be 1,000 megawatts when fully complete and, even now, would be the largest offshore wind farm in the world when it is complete. You can see London Array is the middle one in the Thames Estuary there.

The right hand slide shows the various Round 3 areas, the zones, that are now being developed by various consortia. You will see that it is an enormous area of seabed that is being developed. That is really where the future possibility of meeting any energy gap from a renewable point of view is based. As I go further through this you will see that the challenges are absolutely enormous for that and the timetables may be longer than people hope.

London Array, the location in the middle of the Thames Estuary, was effectively chosen for us by the shipping. What you see on this slide are radar shipping tracks. This was part of the environmental statement. The bit in the middle there is the site of London Array, between the main shipping lanes into London and across to the continent. Interestingly, one of the problems we have had is with the red throated diver, a bird that winters in the Thames Estuary, and its favourite spot to winter - you can imagine when you look at that - is exactly the same place that we want to put our turbines. That is why we have a two phased project. The first phase has been given the go ahead. The second phase depends upon the satisfaction of various studies that we are not going to cause adverse effect to the population of red throated divers going forward.

In this project overview just a quick summary of the project itself and a little look in the inserted map of Round 2.5. I have mentioned Rounds 1 and 2 and I also mentioned that Round 3 offshore has got quite a long gestation period purely because of the size and the difficulty of those projects and the distance

offshore. The Crown Estate has tried to bridge the gap. When you have built up an industry for Rounds 1 and 2 you do not want the industry to fade away before you start doing Round 3. It wanted to keep the supply chain operating and built up so that when Round 3 came though the UK could perhaps do a lot more itself on Round 3. What you see there, in that top little map, are the green bits are the extensions of the Round 2 and 1 projects that are proposed. Thanet 2 has been dropped but the Galloper wind farm will be as big as London Array when it has been extended by this bit. Thetimescales - probably 2015, 2016, 2017 as the dates for those extensions to come on line.

Looking at the project itself, you will see that we have a 50 year lease from the Crown Estate. We have a lot of real estate which we can use. We will not be using all of that. The bottom left hand corner of the London Array bit of the map you can see has been left clear and that is so that we do not cause problems for navigation radar. We cannot use that area; we have had to back the turbines off. There is a junction there between two main shipping routes so we have to move the turbines back from that point.

We had the investment decision for the first phase - 175, 3.6 megawatt turbines, so 630 megawatts - taken in May 2009. Since then we have set up our construction and operations and maintenance headquarters in Ramsgate. We have an onshore sub station just outside Faversham - Cleve Hill. Offshore construction vessels are largely operating from Harwich, apart from the cable contractor who is working from Sheerness. As I mentioned, Phase 2, is subject to a go ahead - and we are reasonably confident we will get the extra 370 megawatts.

This slide should give you a feel of the elapsed time for the project. London Array has had one or two hiccups. Its first hiccup was when the local authority rejected the application for the sub station onshore. That added a year to the project's timescale because we went through a public inquiry. Then, as you might remember, Shell very publicly sold up its share in London Array and, as a result of that, we missed our grid connection date. Some of the stuff we had to do to qualify for a grid connection, we missed that so that pushed it back by another year. What was expected to be completed in 2010 is now expected to be completed in 2012.

There is a little comment in there about budget assistance for Round 2 projects. That is really quite important. At the time we were coming up to make the financial investment decision there was a move from one Renewables Obligation Certificate (ROC) to one and a half ROCs for offshore wind as an increase in support but, for certain projects in Round 2, including London Array Phase 1, that was upped to two ROCs. They were at a certain stage. There was a major shift in exchange rate between the pound and the euro and the bulk of the cost was in euro. I think it was a 40% move at that particular point. The decision was to give those specific projects two ROCs per megawatt hour. Without that extra half ROC London Array would not have gone ahead. It was that close. The final two points to mention there. We started onshore in July 2009 and we started offshore this March.

This gives you the overall schedule. We are now in quarter two of 2011, so the onshore sub station and foundation installation is underway at the moment. During the course of the summer we will put in the offshore sub stations and the first two export cables. The little triangle, three down, is the critical thing. That is our grid connection date. After that we can start installing turbines and powering them up. Purely by coincidence, there will be something like 100 turbines operating at the time of the Olympics.

This is an artist's impression of the onshore sub station and the cause of the public inquiry. It is probably unique in the sense that it went through a design competition and this is the result of the design competition. One of the thoughts was that we should try to replicate the beach huts. This is only 700 yards from Seasalter Beach. I am not sure that they have managed to do that but certainly it is a very imposing sub station and a very orderly one. It was on the basis of this design that we got our go ahead. It is a full size new sub station with a National Grid element to the top of the picture there - the buildings up there - connecting into the 400,000 volt overhead line. Going back to the earlier part of the conversation, this would be coming into London. Power from here could be coming into London via the National Grid.

Now a quick rundown through what is happening at the moment. What you have here are monopiles and the transition pieces that sit on top and the turbines go on top of that. These are manufactured in Germany and Denmark and this, actually, is the first large load of these being towed across from Aalborg in Denmark about a month or so ago. Two months ago now. That white blob on the top of one of them is the radar that we have to install to keep an eye up and down Black Deep and Fisherman's Gat for navigation radar purposes.

The picture on the right is one of those monopiles in what is called the gripper on the installation vessel and just down in the right hand corner you can see the top of the hammer itself which goes on to the top of the monopile to drive it into the seabed. The monopiles can be anything between 35 metres and 70 metres long and weigh anything up to 500 tonnes or so. There is a finished article on the left hand side and that was our first foundation installed on 8 March 2011.

The main installation vessels that we are using; the Sea Worker, the one at the bottom, was at the time of doing that first monopile at night. That is a jack up vessel which has to be towed into position and then jacks itself up. The more important one is the one on the right and that is the Adventure. She is seen there in Grand Harbour, Valetta, having just managed safely to come past Somalia from China where she had been constructed. She arrived in Harwich on 9 May 2011. She is now in Teesside mobilising and the first foundations that she will put in will be in June 2011. Then the two ships will work together to install foundations.

These amazing things are the transition pieces for the two offshore sub stations. All those tubes are J-Tubes up which the cables go, the Array cables and the export cables. You can see the size of them by the size of the individuals at the bottom there. That was them being loaded out in Belgium to come across. That is the first one actually being installed last Friday. If the weather stays like this - and I really hope it does - then the second one should be going in, the monopile first and then the transition piece, over the next two days.

This picture is not very clear I am afraid. The scaffolding is being removed but you have the two offshore sub stations - the top sides - there. They weigh about 1,500 tonnes each. Again, you can get a feel of the scale - there is a man down in the bottom of the picture in a yellow jacket. Those are plonked on top of those large structures you have just seen.

We must not forget cables. They are absolutely the lifeblood. They are also, usually, the biggest problem. They are the most easy things to damage in the course of construction or to put an anchor through or something like that. Certainly insurers see cable installation as the area where they get most claims during a construction project for offshore wind.

What you have there are the three main vessels that we will be using. The Stemat Spirit at the top there carries 54 kilometres of cable, and no joints, from the wind farm right up to that sub station. That is by far the heaviest item for the wind farm at 4,600 tonnes. Just one continuous cable. In total there will be four of those. That vessel is very good in the sense that it can beach as well as go into deep water so it can do the full length of the cable. Then we have 200 kilometres of cables joining between the turbines and the sub station.

Finally, the turbines themselves; This is a fairly standard size now for offshore; about 3.6 megawatt. The next generation will be 6 megawatt and 7 megawatt. We put it there against the London Eye to get a feel. So 175 of those is a fairly major site. They are 600 metres apart in one direction and 1,000 metres apart in the other direction so ships can go between quite comfortably. Nevertheless, it gives an idea of the scale I think.

Just to sum up then, we have a two phased project. The first phase is 630 megawatts; the complete farm 1,000 megawatts. The investment is 2.2 billion euros for that first phase; that is just under £2 billion. Going back to the earlier comment about terawatt hours, you can see that that first phase will be 2.5 terawatt hours itself. The target completion is December 2012 and we are on target for

December 2012. There is a long way to go yet and weather can have a big impact on this. Homes supplied will be 470,000 odd for the first phase. CO₂ reduction will be 900,000 tonnes. The wind farm is about 100 kilometres from where we are now.

Murad Qureshi (Chair): Thank you very much, Richard, for that informed presentation. We have been trying to get information on London Array for a little while. There are two things I have picked up: how busy the Thames Estuary is, from your earlier slides, and how much of the kit is coming from abroad. I will leave Mike to lead on the questions here.

Mike Tuffrey (AM): A couple of factual things first. I think it was 750,000 homes when the whole thing is completed. That is measured by a typical electricity need for a domestic home?

Richard Rigg (Project Director, London Array): Yes, it is.

Mike Tuffrey (AM): We are talking about a bit less than 20% of London's needs?

Richard Rigg (Project Director, London Array): It is based on an average annual household energy consumption of 4,478 kilowatt hours and a particular load factor that we have assumed for the wind farm.

Mike Tuffrey (AM): It is clearly very sizeable if one just sees it from a London perspective. I liked your 100 kilometres from City Hall; it is just down the river! Then I was interested in the financing. You mentioned Shell dropping out. It is noticeable that it is a Danish company, a German company and a Middle Eastern company; the three you have put up there. In terms of the national scene of moving towards renewables, you said that you were not involved in that side, but do you have any comment on any lessons from what you have been through for a national situation in terms of funding and partners?

Richard Rigg (Project Director, London Array): If we start with the particular. The two large shareholders are actually doing this project on balance sheet. Interestingly, Masdar, the one you would not expect is the one who is looking for bank financing. Certainly up to this stage the finance would not be available for an offshore wind farm of this scale very readily from the finance markets. Refinancing, when the wind farm is built, is a totally different issue. To get it to that stage it was generally - I am not quite sure how far it has changed - difficult to raise that sort of money through project finance. As time goes on it will have to happen, otherwise the investment will not take place.

Mike Tuffrey (AM): OK. That takes us beyond our business today but we are sitting across from the City of London and it has come in for some stick recently so certainly I would hope that it steps up to the plate in terms of helping.

Darren Johnson (Deputy Chair): In terms of the 2016 completion date, will that be maximum capacity by then for the wind farm and you would have to look at other areas, rather than try to squeeze anything more into this particular project?

Richard Rigg (Project Director, London Array): 2016 is on the assumption that the second phase goes through, which we hope it will. We would very much like to be able to expand a little bit further north but that part of the seabed is occupied by aggregates licensees for the Crown Estate and until those aggregates' licences are - I am afraid one of them is an ever green licence so it is going to be quite a long time before that sort of area might become available. We were interested in that area to be part of Round 2.5 as well, but I am afraid those licences prevented us from expanding further north.

Darren Johnson (Deputy Chair): So, effectively, if you wanted to expand you would be looking at completely different areas, as we saw on the original map at the start?

Richard Rigg (Project Director, London Array): That would be a different project and possibly even a different consortium.

Darren Johnson (Deputy Chair): That is helpful. Thank you.

Mike Tuffrey (AM): In which case we have got a set of questions for all our witnesses around the potential for renewables to close this gap that we were talking about in the first section. The first question is around the UK Government's 15% target and an assessment of whether that is likely. Let's start with Alastair and then get comments.

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): It is clearly challenging but it is also achievable. Certainly on the electricity side the industry is planning to achieve it. To do that we need to deliver some very big projects on time. Richard mentioned the Round 3 projects. They are much further out at sea than yours - newer engineering challenges there. Delivering those on time - there are risks there. Again, it is about clearing away all the problems that we face now. That is up to Government to bulldoze out of the way all the barriers so that we can do this and focus on delivery.

On the energy side there is also in heat quite a lot of challenges as well around delivering renewable heat because that is about going in and retrofitting boilers and that is quite difficult to do compared to building wind farms or whatever in one place.

Mike Tuffrey (AM): We have talked about wind but there are other renewable technologies. Can somebody give us an indication as to solar and wave etc?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): Yes. To meet the 2020 target wind is going to be very important - we just talked about that - both offshore and onshore. Increasingly biomass generation as well: burning wood and that kind of thing. There are a number of proposals for biomass plants and, potentially, even converting some of our existing coal fired plants into biomass plants. Technologies such as photovoltaics (PV) will play a relatively small role until 2020 I think. We are talking a couple of percent. Then the marine technologies, the wave and tidal, where you are really looking slightly longer term. They are about to enter the demonstration phase and you are probably looking to the 2020s before they have a really big impact.

Mike Tuffrey (AM): In terms of other barriers and removing barriers, you talked about uncertainty about the regulatory framework and particularly the price of carbon. Presumably that is a reference to the basic cost of other energy sources? With oil at US\$100 a barrel - and in the medium term projections nobody is expecting that to go back down to the figures that we used to see - is the normal projection on the price of other energy sources likely to make renewables in themselves economic, or does one need to have these mechanisms for pricing carbon to make them effective?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): There will come hopefully, and there should come, a time at which renewables become cost effective with other technologies. If you look at the economics at the moment, gas is the cheapest thing to do. Then maybe nuclear and I am sure wind and then other technologies are about bringing the costs down so that, in the long term, they are effective. At the moment, on the basis of fuel prices and carbon prices alone, that is not enough to incentivise these technologies so we need this additional support.

One of the issues we are facing at the moment is that, in an effort to ensure cost effectiveness, the Government is continually reviewing these support arrangements and what we need is some stability there so that the industry can see what it is doing and just get on and invest.

Mike Tuffrey (AM): Yes. OK. Moving then on to what role London or the GLA can play in this, what actions would you like to see the Mayor take to support renewable generation? I am not talking about the decentralised stuff - we are coming on to that in a minute. The obvious one for me - which has been knocking around for quite some years - is the London Underground which has a very predictable energy demand. I still do not understand - despite having asked questions for as long as I have been here which

is ten years now - why we are not using the certain purchasing power of that to kick start some additional renewable supply. Let's ask Peter as to why haven't we cracked it yet?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): I know the London Development Agency (LDA) is currently working with Transport for London (TfL) to explore how it might do that. I do not have the details I am afraid to hand but I am happy to come back on that point if that is OK.

Mike Tuffrey (AM): The problem is that is the answer I have had since about 2002. In other words, "We're looking at it. We're working at it".

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): It has been exploring a range of options. I can come back to you.

Mike Tuffrey (AM): I did not give you notice so that is fine. Can anybody then give us a broader perspective, away from the underground, as to things that City Hall can do to help on the renewables area? As I say, other than the decentralised route. Are we just dependent on central government doing its stuff? Silence!

Richard Rigg (Project Director, London Array): It is very difficult.

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): I guess the thing with City Hall is we have got limited regulatory power in this respect. Where we do have some regulatory power is through the planning system but that can only stimulate demand and supply for large scale decentralised energy and micro generation within London. Beyond that, it is really our capacity to set out the implications for London and to work with Government to ensure that it puts in place a regulatory framework that can provide London with low carbon, low or stable cost electricity and heat.

Added to that we are currently also doing a piece of work which is looking at renewable and decentralised energy potential capacity in London. It is updating a table. In fact we had the London Plan taking account of physical constraints for certain technologies and also economic constraints. That would give us a much better picture of what can be delivered there. I am sure Wayne [Hubbard] will go on to talk about the opportunities for waste in a moment. That would give us a greater accuracy of information as to what technologies can be deployed and where. We are looking to publish that with the Strategy in the summer.

Richard Rigg (Project Director, London Array): On that particular point, if you are going to decentralised generation I have a firm belief, a personal belief, that every little bit helps. If you can encourage micro generation for a raft of different means it will all help to chip towards the target that you are looking for. Every megawatt hour or even 50 kilowatts that you save importing off the National Grid also means that there are not the losses that happen as the power comes down through the National Grid to the local area. If you combine that with energy saving, which you are doing to the maximum you can, you might be able to make a noticeable difference, rather than perhaps a significant difference. I think it would be well worth doing. That probably is the sort of thing you are looking at in your report.

Mike Tuffrey (AM): Absolutely. OK. From a London perspective there is the demand reduction side which, as you said, we have been looking at in terms of energy efficiency, and then there is the local stuff which we are going to come on to. I suppose I am still just fishing. The Array was not a London-led scheme but clearly because of the proximity and your point about the transmission losses, there is a sense of affinity that it is close to us and it will cover 20% of our electricity demand, or thereabouts. There is no other technical big solution like that that we ought to be championing? We clearly do not have the £2 billion to invest and it requires national regulation, but are there any other big schemes that London ought to be championing or lobbying central government to get moving?

Richard Rigg (Project Director, London Array): I do not know what might come out of looking into this but has the river been looked at really effectively as a source?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): The river has been looked at as part of the renewable capacity study I was talking about. We have explored a whole range of renewable --

Richard Rigg (Project Director, London Array): River generation?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): Yes.

Richard Rigg (Project Director, London Array): A tidal equivalent being operated in the river?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): We have looked at the river within the constraints of the Greater London boundaries.

Mike Tuffrey (AM): Although your comment reminds me that I did see the Environment Agency presentation a few years ago in terms of flood protection, or rising sea level protections, a Thames barrier but out down the estuary which would both protect from flooding and generate electricity on a Severn barrage type thing but nothing on that scale. It was 50 or 70 years out and the economics are pretty - never mind the environmental impacts. Other than that sort of big scheme there is nothing else that our witnesses say we should be doing?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): We will come on to waste later but I think waste will play a significant role in provision of renewable energy for London. It will not be in one or two big installations; it will be a plethora of small to medium sized installations - a bit like the chipping away approach - but the combined scale of those installations will be about half of the renewable energy requirement that the Mayor set up. It has the potential to be quite significant. Of course the London Waste and Recycling Board can play a reasonably significant role in helping to encourage those kinds of facilities to invest in London. Maybe we will come on to that in a bit more detail later.

Murad Qureshi (Chair): Just before I hand over the area of decentralised energy to Roger, I just had a few questions. To what extent are transmission costs an issue from other parts of the country? I say that because some of us - the last time I was chairing the Committee - did pay a visit to Scotland and it seemed to be quite a live issue up there. They saw the exporting of their renewable energies to the rest of the British Isles as quite important. Alastair, do you have a view on that? What can be done there from a regional perspective on the national context?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): It is still a live issue, very much so. There is currently a review underway of transmission charging. It is an issue also that divides the industry depending on where you are plugged into the network! If you are based in Scotland at the moment you pay a lot more than if you are based down south near the demand. The general flow of the network is from north to south. It is a difficult issue. As I say, there is this project going on, led by Ofgem, to review it and then come to some sort of solution.

The issue here is, of course, for all the wind farms etc that want to connect in Scotland, they feel they are being penalised having to pay more to connect up there, where the resource is.

Murad Qureshi (Chair): It seems it is one of the ways of plugging the gap on the renewable front. The final thing, Richard, in your presentation. I take on board your points about the structure of London Array. Is there anything to interpret from E.ON closing down the proposal in Kingsnorth and, effectively, moving its investment into London Array? Is that significant? Does it show where the energy companies are going potentially or is it just down to unique features in London Array?

Richard Rigg (Project Director, London Array): I think the two decisions went absolutely in parallel. They were not linked.

Murad Qureshi (Chair): They were not?

Richard Rigg (Project Director, London Array): Though, of course, Kingsnorth was hoping, I think, to be the first to have the carbon capture and storage. For whatever reason that did not materialise.

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): I believe the official word on Kingsnorth was that, because demand fell as a result of the recession, it was no longer a viable project for the near future.

Murad Qureshi (Chair): OK. It is demand related. That is useful. Can I now move on to the next area of questioning which Roger will lead on; the role of decentralised energy?

Roger Evans (AM): This is a question really for Peter and the Mayor's staff. The Mayor has a very ambitious target for 25% of energy to be produced from decentralised energy sources. Can you tell us how you are going to achieve that?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): I am going to pass it over to my colleague, Ross Hudson, who, as well as leading on Low Carbon Zones, is also our lead for decentralised energy.

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): The first thing to point to is the renewables and low carbon capacity study that Peter mentioned earlier which looks at the large scale and small scale decentralised energy generating capacity within London and looks towards the 25% target, though not explicitly with the 25% target in mind. It really looks at what that capacity could be and the constraints that then limit that capacity.

What that study appears to be showing is that the largest potential within London is from the larger scale stuff, so the use of gas fired combined heat and power (CHP), waste, heat, waste to energy sources, biomass and those kinds of things to a significantly greater extent than most of the micro generation technologies.

There are a number of areas of uncertainty but, in terms of those projections, one key area of uncertainty is around air source heat pumps that comes back to the greater use of grid electricity for heat and the use of air source heat pumps. There are lots of technical issues and delivery issues with those sorts of heat pumps as there are with the other heat provision technologies, for example district heating fed by the sources that I have just described.

In terms of delivering the targets, the capacity is there - as this study will be demonstrating - but actually making use of it has lots of issues around it, many of which are similar to the infrastructure issues at the national scale. With district heating infrastructure, for example, you have got the problems of digging up the roads. The main capital cost of these projects is getting the pipes in the ground.

In terms of our programmes, our programme for decentralised energy, as with all our demand side programmes, is really around stimulating the market. We do not have the resources, particularly financial resources, from here obviously to deliver that target ourselves. It is around market creation where we can do that and that is what our colleagues at the LDA have been trying to do.

In the first instance it is about identifying the opportunities and that is what the London heat map and the decentralised energy master planning programme - which is around supporting boroughs to identify opportunities for large scale decentralised energy in their areas - have been about. It is about creating that pipeline of projects and the commercialisation then of those projects, such that they become

investable, either by public sector or by the private sector. For example, projects might be offered up to the London Green Fund where they are not immediately attractive to private sector investment.

We are almost certainly going to get a tranche of money from the European Union (EU) for a project team to take forward some of the projects that have been identified and to offer them up for investment. That is the European Local Energy Assistance (Elena) team.

A number of projects have been identified. Our bid to the EU identifies, I think, eight immediate projects and then a further seven projects that have been identified through the decentralised energy master planning programme. Those projects, if they come to fruition, will only deliver a small percentage of the target. I do not have exact figures. It really is about creating the precedent, creating commercial templates and creating the market for decentralised energy, particularly led by the provision of heat.

We are acutely aware that we cannot do this by ourselves and we need commercial investment but, probably more importantly, we need regulatory reform. The Government needs to help us create a market for heat through incentive mechanisms and through reform of electricity licence arrangements as well.

Roger Evans (AM): Are you saying that, without that reform and the commercial investment, then a 25% target is unrealistic?

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): I would not like to say whether it is any more or less realistic than, for example, the Government's renewables target. Both require the right regulatory and incentive framework to bring those markets through. The capital investment is not going to come from the private sector without that certainty.

Roger Evans (AM): Alastair, I think you are the industry expert. How realistic does this look from your point of view?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): Decentralised energy?

Roger Evans (AM): A 25% target for London.

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): I would agree; it is one of these things that can be done if you want to do it, essentially. There is going to be more scope for decentralised energy and particularly in heat. Heat is, by its nature, quite a local thing. These opportunities will only be realised where they make commercial sense. You cannot force companies to invest in these things. You will find, with renewables, more decentralised energy going on. That is going to change the nature of the distribution network in some way. It is not going to be able to do everything. You are still going to need the large scale generation.

Roger Evans (AM): You talked about commercial demand and things being commercially viable. Surely, if this sort of thing is not commercially viable in a city like London where you have all your customers sitting on top of each other, then it is not going to be commercially viable anywhere?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): Yes, but there will be costs there. For example, if you are thinking about a district heating network, the cost of putting all these pipes in, unless you can be sure that you have got customers there for a long time, you are going to want your product - for example, if you are building --

Roger Evans (AM): They are not going to move away are they - or, if they do, other people will move in?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): That is true. As somebody who is developing something that generates both heat and power you have got a trade off between the heat and the power. If you are going to do that, given that non renewable heat is not currently really supported by any financial incentive mechanism, you need to be sure you are going to make up the difference between what you are losing on the electricity and the heat side.

Roger Evans (AM): Peter, can I ask you about other barriers to decentralisation? A little while ago the Mayor and my colleague, Mr Cleverly, attended the opening of a gasification plant in Rainham, in my patch actually. I was not there because it was not necessarily a good news story in that it had been opposed vociferously by local residents when the planning applications came through and it had been a big fight to get it built. Are your projects, your 15 projects that you talked about, dependent on planning permission and have you factored in possible delays or refusals of permission to your plan?

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): I do not have to hand the details on those projects but all those obstacles will need to be overcome on all those projects and there will be local issues and local planning issues.

One of the things that we are trying to do through these programmes is to demonstrate how these projects can be brought through planning. The projects that are being brought through in the Thames Gateway, for example, one of the key things we are trying to do is work with the local authorities to develop borough-wide local development borders which create planning consent without a planning application for the heat network infrastructure.

What you are talking about really is more around the generation of infrastructure as well. I think that is more of a perception issue possibly as much as anything and that probably needs to be tackled as well.

Roger Evans (AM): OK. We have identified the commercial viability, changes to regulation and the planning process as possible obstacles to the plan. Are there any other significant obstacles that we need to be aware of?

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): The projects that we are talking about are technically proven. There are a lot of European cities that have heat network infrastructure as the primary source of their heating. There is huge latent demand in London, the building density that you described earlier, so it really is about the appropriate regulatory framework, particularly the heat market framework and it is about electricity market reform and licence reform that allows local generators of electricity to sell electricity at retail prices through the local distribution network. That can dramatically change the economics of schemes and it is something that colleagues at the LDA have been leading, on in terms of driving that through Government, and are having some success with.

Then it is about cost of capital and the attractiveness of the initial capital investment and that, again, comes back to the security of that long term demand. That is the key reason we are working with local authorities, local housing providers and public buildings because they can provide the long term anchor heat demands for these projects. Projects are coming through: the Royal Free Hospital, the Olympic scheme. There is real potential there.

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): There is a technical capacity issue too. There are some key players in this and their ability to drive forward some of these projects - which was the philosophy behind the Elena bid we put in and were successful with - to enable us to provide that support on projects in terms of technical issues, finance structuring and structuring of delivery vehicles for these kinds of projects. We have identified that as an area where the capacity is not really there and it needs to be built up. That is the approach we are taking to do that.

Roger Evans (AM): You said a little while ago that you are doing work with the LDA on this. Is this project safeguarded with the move of functions from the LDA and where will that sit after the LDA has gone?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): Yes, it is safeguarded. The team working on this at the LDA forms part of the climate change programmes unit over there and they are being folded in, I understand, over the summer. As I mentioned, the funding we have secured through the European Investment Bank which is 3 million euros over three years will effectively allow us to continue that work.

James Cleverly (AM): Peter, the thing that strikes me is that decentralised energy production happens already. Most homes in London have got a boiler in there and we have incredibly inefficient micro generation. This Committee has done work in the past, as we discussed, about both the air quality implications and other implications of household boilers. Do you think we run the risk of missing the sweet spot between trying to move away from that ultra decentralised inefficient energy production, making a big jump to very large scale heat networks built on, to support still fairly significant scale energy production? Might there be somewhere in the middle where we are looking at smaller clusters? You mentioned about the Olympic Park. It strikes me that that ultimately will be made up of a series of clusters. Are we missing the opportunity to get decentralised energy, fairly moderate scale, centred around a cluster - it would probably be unfair to call it a heat network - of recipients?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): The reality is decentralised energy rolls out at a range of scale. For example, in the draft replacement London Plan we have a hierarchy of options so we ask developers to look at the opportunity to connect to a network if it exists and that goes down then to a site-wide solution as the bottom of that. I do not think that is excluded. The way it is being rolled out at the moment is that small, medium and large scale.

James Cleverly (AM): OK. Is it getting as much intellectual focus as district heating? I think it is a standing declaration that, as a Board Member of the LDA, I know there is a lot of talk about decentralised energy schemes, certainly in East London both north and south of the river. The scale of these things I always felt was prohibitive. I hear considerably less about those mid scale supporting decentralised energy production in some of the social housing schemes that the Mayor is promoting or using our planning powers or using our bully pulpit to encourage local planning authorities to be a little bit more aware - not forcing their hands - of the opportunities there.

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): Ross, do you want to add something on how we do that?

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): Absolutely. That really has, as a policy, been our primary focus. The LDA is doing both those things. Even the Thames Gateway heat network project would have been taken forward piecemeal so you are talking, for the most part, about smaller clusters that then link up at the appropriate time. The reason that we are driving towards scale is because, at that scale, you get greater efficiencies and you get greater carbon savings.

Nobody is going to invest in a massive pipe running right through the centre of London upfront so it does need to be built up by clusters. The decentralised energy master planning programme is working with boroughs to identify those local opportunities and to build the capacity within local authorities to take those projects forward, either themselves or to offer them up to the market. A lot of those are based around housing estates, around public buildings and around smaller regeneration areas. The projects that the ELENA team will be looking to build up will be at a range of different scales and a lot of them will be under these two to five megawatt engines so serving equivalent to 5,000 to 20,000 homes, for example, rather than a huge pipeway through the Thames Gateway in the first instance.

James Cleverly (AM): It strikes me that we are coming, hopefully, towards the end of a period of stagnation when it comes to house building. The economic climate has not been particularly favourable

and there has been a bit of a hiatus. That is, I would like to think, an opportunity to inject into the minds of property developers – my colleague discussed some of the barriers to decentralised energy and its efficient use – to make sure that where barriers do exist, where possible, they are stripped down so that when the tap does start opening up again in terms of private sector property development, not necessarily stimulated by the Mayor but just in London generally, small scale heat networks attached to decentralised energy production is part of it. I go through Lewisham every day on my way into work and there is now a very significant housing development right in the heart of Lewisham. I have not checked – and I know there are people around this table who are perhaps slightly more knowledgeable than me – but I am concerned, and I rather suspect, that does not have the most efficient energy production dissemination system. It is projects like that that I think we really need to break the back of.

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): We totally agree with that. We have had extremely stringent planning requirements, particularly on strategic scale developments, for a number of years. We have changed those to make them carbon driven, rather than tied around particular targets for types of measures. That is absolutely what we drive through the planning system. The reason that these new developments are so important is not just about reducing demand from those new developments but that they provide the opportunity in a lot of cases to get some of this key decentralised energy infrastructure in the ground and then to feed out to the existing buildings that surround those developments as well.

Murad Qureshi (Chair): Thank you. At this moment can I welcome Park Walk Primary School from Chelsea to the Environment Committee? If you are wondering what we are talking about, we are talking about whether there is an energy gap in the future and we just want to make sure there is enough energy for you to switch on the lights when you are adults. If we do not get that right you can blame some of us around here and some of the people over there! It is of interest to you although it may sound very boring and turgid!

Mike Tuffrey (AM): It is getting boring and turgid because I have been sitting round this table with people talking about the potential for decentralised energy if we get the economics right – agreed – and if we get the regulatory regime right. Ross, you mentioned that. What are the regulatory problems and why have we not fixed them, given that there is a White Paper coming and given everything seems to change nationally on every other front? Why are we not getting this fixed? What are the regulatory problems to make this happen in London?

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): The issue at the national scale is DECC clearly has a national focus. It has a predisposition to looking at large scale electricity generation and then everything else has tended, thus far, to sit around that. Alastair talked about the absence of a properly constructed heat policy, for example. There is an assumption, I think, within parts of DECC at the moment that heat production in the future will be about electricity, air source heat pumps and then biomass out in the countryside. Our analysis suggests that that is not necessarily going to work in London and it is not necessarily going to be the most cost effective solution in London. I guess what we would love but we are unlikely ever to get would be some kind of capital support for putting the heat network pipes in the ground.

Mike Tuffrey (AM): I am just talking about regulatory framework that will unlock the underlying economic reality, rather than coming cap in hand for subsidy because nobody is getting any subsidy.

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): There are a few things. There is an incentive framework like the renewal heat incentive which we think should probably be opened up to low carbon heat as well. I do not think that is likely to happen but that is what we pushed for through our consultation responses and through our lobbying. There is the electricity licence reform for small scale generators that I mentioned earlier. Those two things really are key.

I must also mention the electricity market reform proposals that Government is thinking through at the moment. This is this idea for a large scale feed in tariff really for low carbon electricity generation. Our position is that that should support demand side measures as well. That really would help a lot.

Mike Tuffrey (AM): Have we taken London's needs - they are probably not unique to London - to national government? What has been that process?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): We currently have a secondee from the LDA working for DECC part time in the heat team. That has enabled us to, it is fair to say, get our voice heard on some of these issues that face cities, not just London. That is starting to change the mindset. We are starting to see a change in DECC's approach. We talked about the emerging Heat Strategy. That is on the agenda - and some of these other reforms that are going through. This kind of thinking is being fed in by my colleague.

Mike Tuffrey (AM): What would be useful is if immediately after the meeting, in the next week, we could have a written something from you just setting out exactly what London needs sorting from national government because that may well feed into anything we want to say as a result of this study and each of us in our different ways has ways into the national scene to try to unlock some of these things, particularly if we are waiting for a White Paper. I am frustrated that we are here again, X years on, saying, "Oh the regulatory thing. I want those sorted".

Could I ask, specifically, what has gone wrong - again, I did not give you notice of this - in Elephant and Castle? If Nicky [Gavron] was here she would be telling us about multi-utility service companies (MUSCOs) and Energy Service Companies (ESCOs) and various other 'COs'. The Elephant scheme is going ahead. It is not 100 kilometres from City Hall; it is about two kilometres from City Hall. I understand the great prize of some sort of local energy thing has been scrapped. I do not know. Does anybody know the ins and outs of that?

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): I know the ins and outs of it. There still will be a low carbon energy solution at a location scale within Elephant and Castle. The planning system will require that. Obviously it is disappointing that the current commercial deal that was offered up appears to be not attractive to whoever was planning to invest in that infrastructure.

Mike Tuffrey (AM): There was Clinton Foundation money coming in. I am told that it is still sitting on its website as a live project even though it is not live. Again, I probably should not be going into a scheme that you have not had notice of but I am frustrated that the buck does not seem to stop with anybody on making this stuff happen. People talk about these schemes and demonstration projects and Bill Clinton [former President of the United States of America] flies into town to give out some money and everybody goes "ra ra!" and then it disappears. There seems to be no real gripping and making things happen. It is frustrating.

Murad Qureshi (Chair): That is useful. I will take up your suggestion, Mike, that we will do it under delegated authority to write to the Mayor to give us an update on what you think needs to be done on the national scene and we will take up your offer as well of getting through to Chris Huhne [Secretary of State for Energy and Climate Change]. I think that is what you were suggesting. I just hope he is still there!

One final thing that I wanted to ask on this section was one of the things that I always picked up which was going to be the big stimulus on decentralised energy was the feed in tariff. I have only come across one or two instances in the GLA group where that has been operative. It came into being in April 2010. It was one of the last things the Labour administration did. Is there a verdict yet on whether it has helped do what it was intended to do in the London context? It would be useful to hear from the energy sector because, presumably, it means a bit of competition on your part and how you respond to competition?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): I cannot speak about the London context on the feed in tariff. I do not have the figures. Nationally it has been successful and if you look at the figures the take up of PV has been pretty extraordinary. The trouble with the feed in tariff is that it has been too successful and the Government, because of the Spending Review, has had to implement cuts to the support mechanisms and now it is reviewing the levels of support for the feed in tariff, in particular at the moment for large scale PV. Not the stuff you have got in your house but the larger schemes. What you were getting was a lot of schemes being proposed covering fields in solar panels. Now it has put in place an emergency review for the levels of support there, slashing them really quite substantially.

Again, it is this problem of putting in place an incentive mechanism which has made lots of people sit up and go, "That looks like a very good return". It has encouraged the industry to develop but then it has changed the goal posts.

Murad Qureshi (Chair): Peter, is that the picture? In London we do have 350 farms. In places like Bexley and Bromley you will find a lot of them. Is that the same picture here in London?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): Alastair makes a good point. If you look at the feed in tariff it is a very similar scheme to what has been operating in Germany for ten years now. The first review of the pricing mechanism in Germany happened after ten years and we have reviewed it within the first year. There is something around that signal to the market and giving people confidence to invest. That is quite an interesting observation. It certainly has been successful. I seem to remember seeing figures recently that, in the first six or seven months, the amount of capacity installed UK-wide was something like the same as had been installed over the last 15 years. It was in that sort of quantum, to give you an indication.

Murad Qureshi (Chair): That is useful. James, that has prompted you?

James Cleverly (AM): Following up from that, Alastair, do you feel that the price set for the feed in tariff from the offset was too generous?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): I think there was a feeling in the industry, when the levels were announced, that they were unsustainable for PV.

James Cleverly (AM): Right. You mentioned what happened here. Peter mentioned what has happened in Germany. Spain went through a similar situation where it started off with incredibly generous feed in tariffs, realised that it was going to be financially unsustainable and then cut it, and they have now had the flipside where no one is building anything because even though feed in tariffs exist there is no confidence in the longevity of that. Do you think there is a lesson that we have got to learn here whereby feed in tariffs are like a puppy; it is not just for Christmas?! Conceptually it is sound but the tariff has to be set at a level which is attractive but not so attractive that it comically distorts the market. Covering fields just at the end of London with PV cells instead of brussels sprouts and peas is really not the direction that we want to go in.

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): I would agree. The big challenge in renewable support schemes at the moment is that trade off between providing appropriate certainty and providing cost effectiveness for consumers. The nature of a feed in tariff is that it requires the Government to set the right level of support and governments, traditionally, are not very good at that. The trouble with the feed in tariff is that you give lots of support, the industry develops, the costs come down and then you are paying too much. They have at least agreed the principles of grandfathering so, once you have already invested, then you continue to get the same levels of support, which is very welcome. As an industry we will have to have an ongoing conversation with central government around how does it best set these levels in a way that provides us with the confidence we need. In fact, the electricity market reform might provide a way of doing that.

Murad Qureshi (Chair): Can we now move on to the final area of our discussion this morning; waste energy.

Darren Johnson (Deputy Chair): We looked at this as a Committee previously and flagged up the potential way, particularly in terms of anaerobic digestion. Can you tell us what the London Waste and Recycling Board is doing to encourage investment in this area?

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): Yes. The London Waste and Recycling Board has an amount of money. It had an amount of money, over the last spending review period, of round about £58 million and has round about £20 million going into the next spending review period. Looking at the requirements for waste management through the Mayor's Municipal Waste Management Strategy, in the broader context of commercial industrial waste and local authority collected waste, we have targeted our investment in terms of infrastructure against those areas where more investment is needed. That has been particularly around anaerobic digestion (AD), a bit of thermal treatment, some waste fuel production and also reprocessing and recycling - which I appreciate we are not talking about today but that is the context in which we operate; on a whole waste lifecycle perspective.

In terms of the energy infrastructure - and I suppose infrastructure in general - our perception of the market is this. Because of the current economic climate infrastructure development is difficult and tricky. There is a lack of capacity of certainly bank debt and although venture capital has come into the system, because there is an opportunity for venture capital to take greater risk, there is still a capacity issue around that capital and it will obviously flow to those projects which are 1) wanted and 2) seem to be the least risky. Obviously there is a link between the two.

In terms of waste you have risks from the feed stock, getting hold of the feed stock, getting the right feed stock, the technology risks around waste, around anaerobic digestion and gasification and even around so called mature technologies like incineration there are massive risks. The scale of development is relatively small for AD and gasification plants compared to, for example, the kinds of things we have heard today. Banks are looking for big projects, not small projects, so they are less inclined to invest. We have talked about planning risk.

All these things that are applicable to energy projects are also applicable to those projects but I would say more so because, traditionally, waste has been a Cinderella service that takes place in the Shires and a hole in the ground as opposed to in London in a flashy piece of kit. Obviously we have got the two incinerators but that is about it.

What the London Waste and Recycling Board (LWARB) does is asks for projects that have some substance and that are almost ready but, for whatever reason, have failed to attract completely the necessary investment from the private sector. We look at those projects in detail and we pitch a small amount of capital to take some of the sting out of the expensive capital that they have probably got through a high level of gearing towards equity capital and we will offer that either as a debt structure or as a mezzanine structure sitting between equity and debt. We will typically structure those lines over a five to seven year period with an exit allowing the plant operator to refinance having demonstrated the plant's ability to deliver and source feed stock. Rather than a grant system using that approach we have been quite successful in attracting good quality projects from a range of different technologies.

Also, it is probably the kind of thing that the Green Investment Bank will be looking at in terms of how it will seek to inject capital into similar projects.

Darren Johnson (Deputy Chair): Alastair, do you see potential in this sector in terms of making a significant contribution to energy needs?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): In the waste to energy sector? Yes. If the fuel stream is there, why not use it? There are companies who are

certainly looking at doing that. One of our members is. The project you mentioned in Rainham earlier; one of our members is doing that.

Darren Johnson (Deputy Chair): Not all waste to energy can be regarded as renewable can it? It depends on what is going into the kit. Obviously anaerobic digestion, where it is vegetable matter and is not including any plastics or anything like that, would be completely renewable, but others would not be would they?

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): Absolutely. You have really got to the core of the argument. Traditionally waste management has taken an energy from waste approach which means a small amount of energy from the energy in the waste feed stock is extracted and, typically, around half of that is fossil fuel derived energy. It ticks the decentralised energy box in the sense that you have got a big piece of infrastructure but, at the moment, it is delivering poor carbon energy. The thing that you can do with mass burn is be a bit more selective about what you put in it, try to get your biomass content higher and extract the heat. Those are quite tricky things.

At the London Waste and Recycling Board we have to accord with the Mayor's strategy. The Mayor is setting out a principle that energy from waste should be at least as carbon intensive as the energy that it is displacing. The kind of technologies that we invest in can displace a range of different energy sources. As an example we are looking to invest in an anaerobic digestion plant seeking to do gas grid injections, so biogas injecting into the national gas grid to provide renewable gas for heating, displacing fossil fuel gas. Or it could use that gas as a transport fuel. We also hope, in future, to be looking at some innovative arrangements around, for example, the use of hydrogen fuel cells, either in stationary or transport applications.

Whereas incineration is quite inflexible, the kinds of things that we are looking at can be more flexible in terms of displacing more fossil-dense energy sources. Also, because we are investing in refuse-derived fuel production processes, one particular plant is Orchid, opposite the Belvedere incinerator. It looks to produce a range of different quality fuels up to waste-derived fuel with an 80% biomass content. They are pulling out the plastic through a mechanical heat feed in plant and reprocessing that plastic - which is what you want to be doing with plastic rather than burning it and releasing that fossil derived carbon.

Darren Johnson (Deputy Chair): Absolutely. Can you point to any projects that have come on line, or are about to come on line, as a result of the work of the Waste and Recycling Board?

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): We have invested in four or five projects but, in terms of anaerobic digestion, probably three projects that we have been involved in. One which is in the public domain is a project called TEG which is an AD plant and also has an in-vessel composting component - about 30,000 tonnes of anaerobic digestion capacity - in the sustainable industries park in Dagenham.

The way we get involved is we are in discussions pre-financial close. Once that deal is done and financial close is achieved then there will probably be a lag of around 18 months to two years before that plant becomes operational. We are at the stage of making these plants happen prior to financial close. It is a brave political decision by the Board I think because trying to make projects happen has a long timescale. These things do not happen overnight. The biosense plant, for example, was not an inauguration of the plant, but an honorary digging of the soil. That plant will actually open probably in about 18 months to two years as well.

Darren Johnson (Deputy Chair): So by 2015 then how many plants are we expecting?

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): From an LWARB perspective that LWARB has been involved in?

Darren Johnson (Deputy Chair): Yes.

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): Probably around four to five with a probable combined capacity of 150,000 to 200,000 tonnes.

Darren Johnson (Deputy Chair): What is the mix between different types of technologies with those four to five?

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): In tonnage terms they will be weighted towards gasification because the biosense plant is around 100,000 tonnes. In numbers it will be weighted towards AD but they will be of a smaller type so round about 30,000 tonnes.

For example, one of the plants that we have been involved in no longer needs our money so we have helped to evolve that business plan --

Darren Johnson (Deputy Chair): So you dangle the money and then you can take it away if they do not need it!

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): They found additional sources of finance because they had developed their business plan to such an extent that it has been attractive to the market, so our involvement has levered in that finance without us having to make the loan. It is a double-edged sword for us because we would like to claim the credit but we have not made the loan; they have gone to the market. It is a great result; we can use that money elsewhere. That is 100,000 tonnes of AD capacity in that one facility.

Darren Johnson (Deputy Chair): A bit like Mike on the topic of decentralised energy, we have been sitting here for the last decade now discussing schemes like this and the potential and when we will see things coming on line and so on. When do you envisage things starting to speed up so that these become a very significant part of our energy contribution and also become the rule, rather than the exception, in terms of how we deal with vegetable waste and so on?

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): I hate to disagree with you, Darren, but ten years ago we were not having these conversations. Ten years ago, as John Lennon said about Elvis, before LWARB there was nothing. We were not having these conversations. We are now having these conversations. We have got a plethora of waste schemes coming forward because of LWARB. Because of other things too but the development of waste in London has been held back because of the financial crisis, because of the lack of capital and because municipal waste contracts are really slow beasts to deliver.

You were probably referring to municipal waste authorities who were having these conversations ten years ago about starting to think about the start of a strategy that might, in three years' time, lead to a procurement process, that in five years' time would lead to a procurement and in another five years would lead to the development of plant. Whereas, at LWARB we can say, "We'll talk to the plant developer that in three years' time will lead to the start of that plant operating" and local authorities can then bid in through their procurement processes for access to that infrastructure, negating the need to go through these long unwieldy processes.

LWARB's proposition is that we would help to create numerous plants in and around London operating on a commercial basis that are not predicated on the back of municipal contracts that local authorities can bid into without the necessity of going through a public private partnership approach which requires the local authority to help our partner to build and design, finance and operate that facility, because somebody else is already doing it.

If we can engender a real market place for waste technologies for local authorities they also get the benefit that the price they are paying is cheaper because they can enter into 5, 10 or 15 year contracts, rather than 30 year contracts which they are currently having to do.

Murad Qureshi (Chair): Wayne, I think your boss wants to ask you a few questions as well!

James Cleverly (AM): Thank you very much, Chair. I apologise for my slightly late arrival which meant that I did not explicitly add a declaration as the Chairman of the London Waste and Recycling Board, so I think it is only fair that I confess to that sin in the here and now.

Wayne, one of the things that we tried to achieve at LWARB - and I would not mind you expanding upon and you were just highlighting it towards the end of the answer to Darren - is the move away from the creation of bespoke waste management solutions for municipal clients. A need is identified at the municipal level - whether it is borough or joint waste authority - and then the industry creates the infrastructure to support that. The Belvedere incinerator is a classic example of that. It is a bespoke build for a municipal client. One of the things we have discussed at LWARB is moving to a more merchant market, so create the infrastructure and allow the municipal players to be buyers in of off the shelf solutions. Moving from a bespoke to a prêt-a-porter model.

I was wondering if you could elaborate on that a little bit to give us an idea of kind of leverage in terms of how much private sector money each pound of public sector money through LWARB drags in and whether you think that is more broadly applicable to other energy production types? What lessons can we draw across from LWARB through other decentralised energy and renewable energy production facilities?

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): I do not know about the last part of that but certainly the model is something that is touched upon in the Mayor's Municipal Waste Management Strategy, partly through discussion with LWARB. The traditional way of disposing of waste from a local authority point of view is through landfill. Now landfill is being squeezed out of the market, quite rightly, through environmental regulation. That gives an opportunity or a requirement to build facilities. In building those facilities a local authority traditionally, before compulsory competitive tendering (CCT), would have gone out and built and operated the thing itself. After CCT it would tender out to do that through some project finance arrangements. They would be big facilities. There would be banks involved. One or two scale waste management companies would have been involved in that process.

What we see is a lot of small to medium scale entrepreneurial players in the market who are reaching a point where they are developing a range of technologies and they are interested in getting involved in the market from a commercial perspective. One thing we can say about London is it is densely populated with waste so it has a lot of commercial industrial waste. It does not require, necessarily, municipal contracts in order to make the things work. The problem is that banks take a very different view of that approach and require municipal contracts to the traditional 80% debt/20% capital project finance model does not work in that instance.

We see an 80% capital/20% debt model where LWARB takes a part of that debt, either at full debt rates or some kind of mezzanine rate. This thing operates for five years and then refinances and LWARB exits, leaving a plant which is operating more or less on commercial industrial waste. As the municipal contracts arise they are able to bid into those contracts and they will displace commercial waste to get hold of 10, 15 year municipal waste contracts. Local authorities then have maybe two or three AD plants bidding against each other for their waste, two or three refuse dry fuel plants or gasification plants, rather than having to go out for a full three to five year European tender - they will have to go through the European route but it will not be so significant - with all the attendance management costs that that involves, say, £1 million just to go through the tendering approach for the local authority and £1 million for the company tendering.

This is a real win/win situation. You have not got a 30 year contract; you can go for a 5, 10 or 15 year contract. It can be more flexible. Local authorities should save money efficiency, they should save money through paying a lower gate fee and they should also have a more flexible waste contract. All of these things LWARB hopes to achieve through that process.

We are looking for, at least, 1:4 leverage. We are getting a bit higher. We put about £30 million into infrastructure and we have got about £170 million from the private sector. It is better than 1:4. We are looking at no more than 20% of the total capital cost as the LWARB investment.

As regards the model, it seems to me the problems that we encounter in the waste sector are very similar to the problems in the energy sector in the sense that there are planning issues, there are feed stock issues and availability issues. There is technology risk. The people bringing the technology forward are small and medium sized players; they are not big companies. The big companies are looking at this and seeing if they want to invest on balance sheet. Where is the capital going to come from? Who is helping make these things affordable, guaranteeing some of the returns?

There is a lesson that the Green Investment Bank at least could learn in terms of the LWARB approach and rolling it out, not just for waste but other projects.

Murad Qureshi (Chair): One thing that did occur to me. We have had the Renewables Obligation Certificate (ROCs) market. That was really to stimulate energy companies to invest in the waste industry on these kinds of things so it would not be as dependent on dollops of public subsidy. Has that taken off in the London context?

Wayne Hubbard (Head of Business Development, London Waste and Recycling Board): The two ROC thing really helped. The biosense plant that we are investing in, for example, has been on the market for a long time and suffered from, "The house has been up for sale for a long time now, why is no one buying it?" That project had been around for a long time and banks thought something must be wrong with it. It was a victim of this changing of regulatory approach. The ROC system was put in place. Then there was discussion about two ROCs so they put the project on hold to see what the outcome of that would be. Then there was a discussion about grandfathering or not grandfathering. Now of course there is a discussion about what is the fit regime and how does that link in with ROCs and we are going to get rid of ROCs anyway. There has been a tinkering of the incentives regime around generation for the last eight to nine years, since the ROC system was introduced in 2002.

It has helped. The subsidy definitely helps in terms of interest of the market. What does not help is the almost annual change. Investors cannot invest until they have some certainty about what the returns are going to be so they can work out what returns they are going to get on their investment. It is obvious I suppose but it does not stop governments from continually changing the regime.

Murad Qureshi (Chair): Does the energy industry have a perspective on how it has worked, or not?

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): On the success of the Renewables Obligation?

Murad Qureshi (Chair): Yes.

Alastair Tolley (Head of Renewable Energy, Association of Electricity Producers): For renewables in general it has actually been reasonably successful but it comes back to exactly what you just said - originally it was one type of scheme. It was all technologies are equal, one ROC per technology. Then they decided to band it to give different levels of support to different technologies. Now something else is going to happen after 2017. We do not know quite what that is yet. There has been this constant change which has not helped. The other thing that has not helped with the Renewables Obligation is all the other problems. For a long time getting grid connections was an impossible thing to do. Planning consent has held back loads of projects.

It has been successful but there have been things that have stopped it being as successful as it could have been.

Murad Qureshi (Chair): Just one or two housekeeping questions I want to ask so we tidy things up. Peter, could you confirm again when we can expect the final Climate Change Mitigation and Energy Strategy from the Mayor's office?

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): In the summer. We are saying late summer. July.

Murad Qureshi (Chair): July. That is useful for our programming purposes. You also mentioned, Peter, the involvement of GLA Economics in some of the early work that was done. I know the projects that are coming on line and not. Would they have some idea of the implications this will have on energy prices?

Ross Hudson (Environment Programme Officer - Low Carbon Zones, GLA): They did not look at the impact on consumers. We could certainly ask them to do that work but I think that they would probably just draw on stuff that is already published by Ofgem.

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): In terms of price impacts on consumers the £200 billion figure we have talked about today is from an Ofgem piece of work called Project Discovery and in that piece of work they have tested different scenarios for delivering the infrastructure we need and that has impacts on bills within that report. I can share that with you if that helps.

Murad Qureshi (Chair): You are right; ultimately we are talking about London consumers and the impact it has on their energy bills. If we have got people here who have at least done some work on that we will probably go to them at least to look ahead and see what the implications are in terms of the prices people say.

On that front, finally, Committee Members, I will be attending the Health and Public Services Committee meetings on fuel poverty. There is a natural link here. I will come back to you if there is anything which I think is useful. Clearly, if prices go up, the further the hikes we have, the more Londoners will go into fuel poverty, particularly when incomes are not going up at all.

We will get a copy of the London Array presentation, I presume?

Richard Rigg (Project Director, London Array): Yes.

Murad Qureshi (Chair): If there is any chance of getting some of us out there I would welcome it. I suspect we would have a few other takers.

Peter Daw (Policy and Programmes Manager, Climate Change Mitigation, GLA): There are plenty of ships going that way!

Richard Rigg (Project Director, London Array): It would probably mean travelling to Ramsgate to go out there.

Murad Qureshi (Chair): That is not a problem. We will do that. Can I thank you, Richard, for informing us about the progress on London Array. It has been in and out of the public arena. Can I thank Alastair for giving us the energy industry's perspective on the role of renewables in plugging the gap, and our officers - Peter, Ross and Wayne - on telling us the Mayor and the GLA's perspective on this? Thank you very much for coming along and giving us your pearls of wisdom.



London Assembly Environment Committee

19 May 2011

**Richard Rigg
Project Director**

Consortium partners



Dong Energy is a leading offshore wind developer, having built around half of all offshore wind farms globally. (50%)



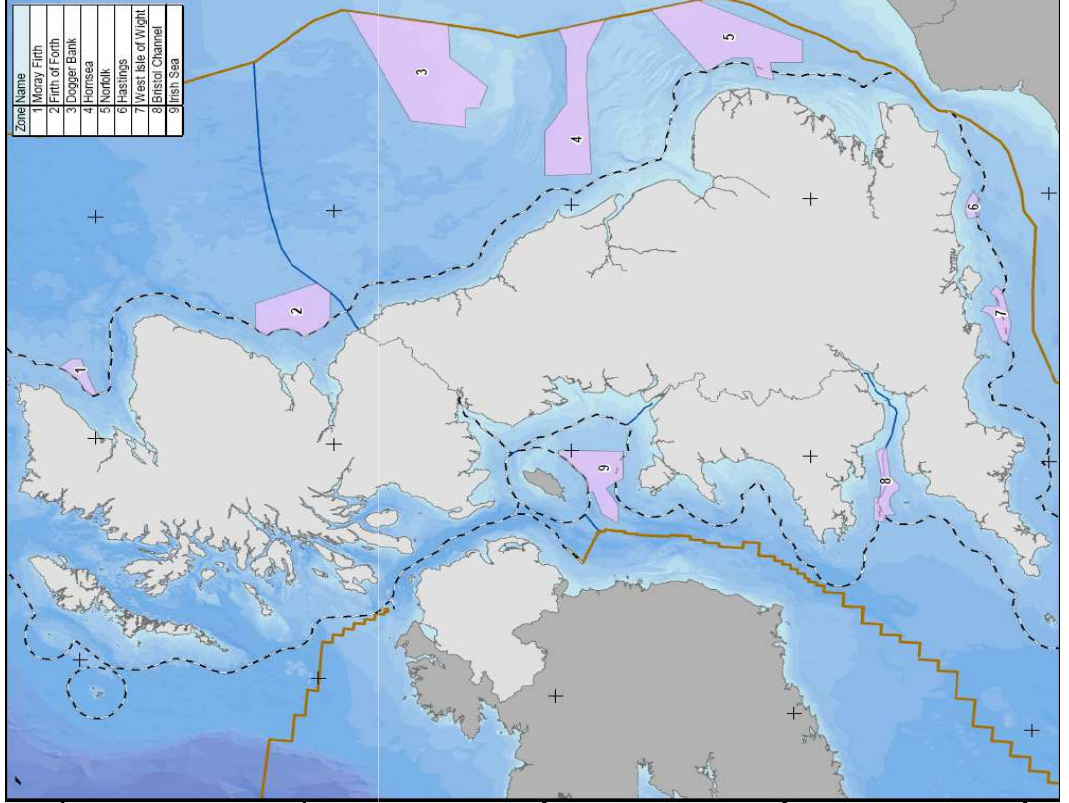
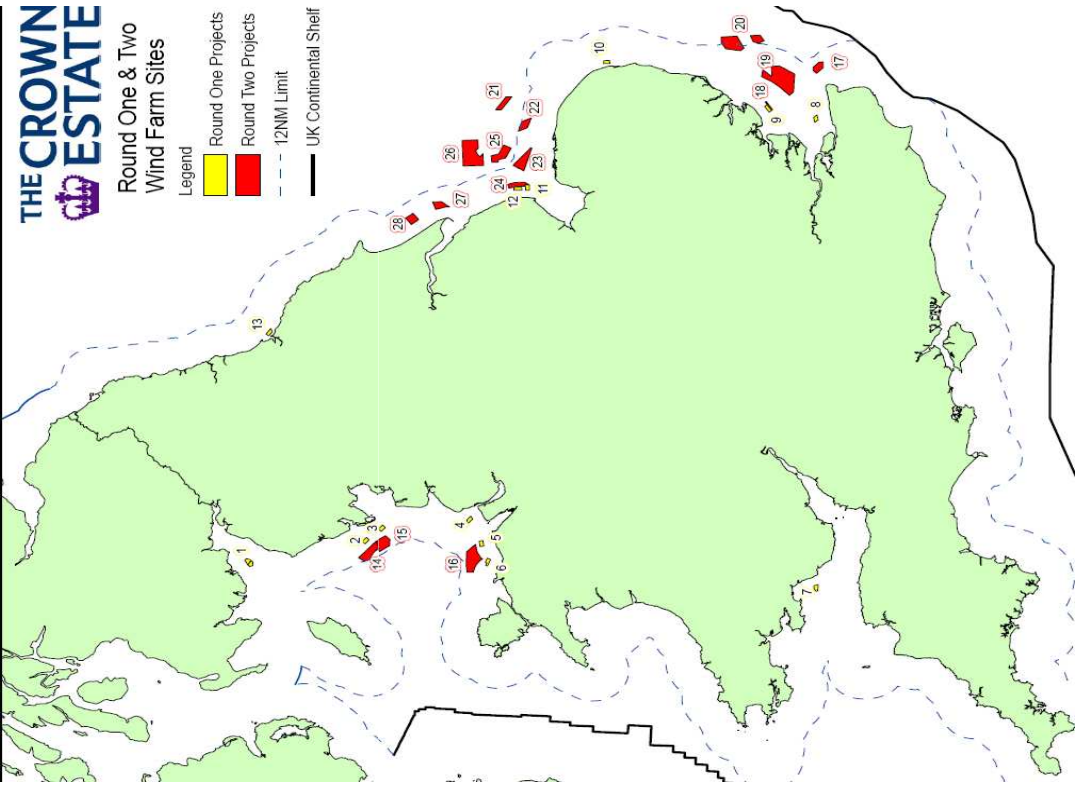
E.ON is one of the world's leading power and gas companies. It's renewable division (E.ON Climate and Renewables) is one of the largest renewable energy companies in the world. (30%)



The **Masdar Initiative** is Abu Dhabi's multi-faceted, multi-billion dollar investment in the development and commercialisation of innovative technologies in renewables, alternative and sustainable energies as well as sustainable design. (20%)



Crown Estate Rounds 1, 2 and 3.



London Array - Site selection

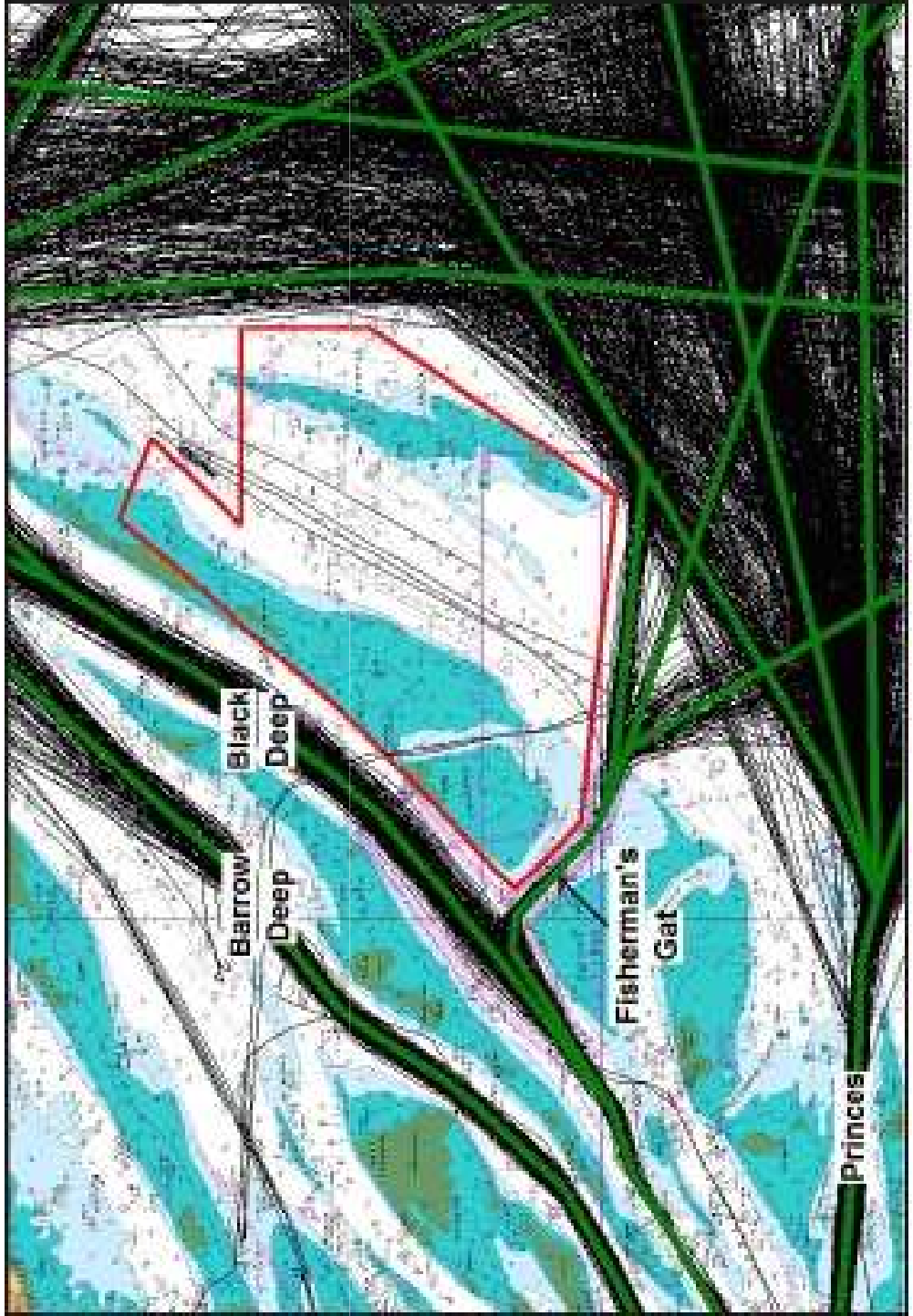


Figure 7.104 Sample of AIS Tracks Superimposed with Main Routes in the Area.

Project overview

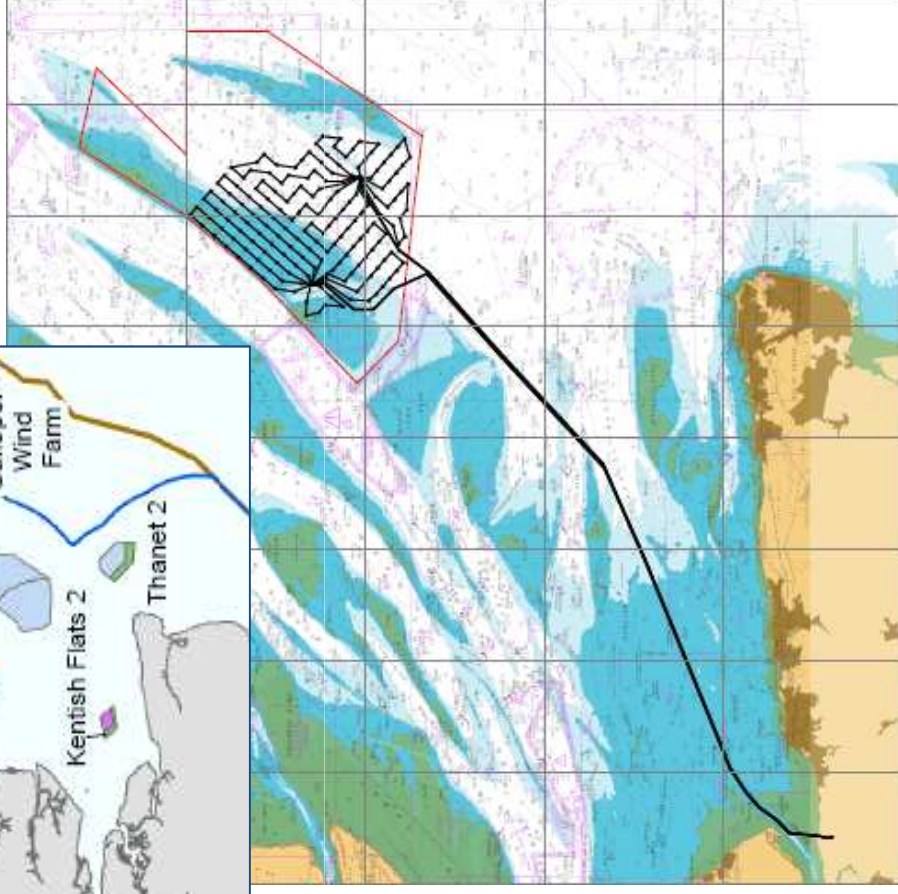
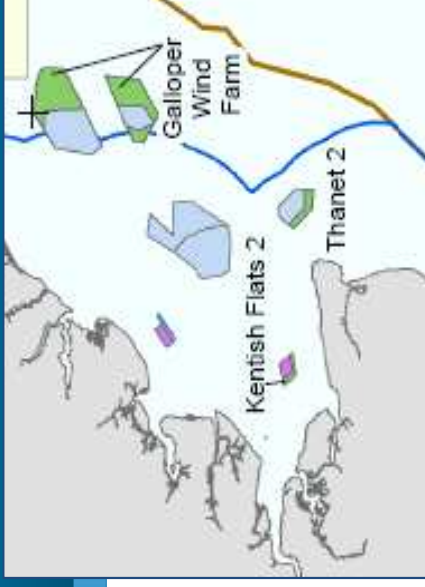


- Crown Estate Round 2 Project
- 1000MW consented
- 20km from Kent & Essex coasts
- Up to 245 km² on 50 year lease

Phase 1 – FID May 2009

- 175 Siemens 3.6MW = 630MW
- Area c.100km²
- Onshore substation – Faversham
- Construction/O&M HQ – Ramsgate
- Construction vessels – Harwich
- Cable contractor - Sheerness

Phase 2 – 370MW - go ahead subject to successful bird studies



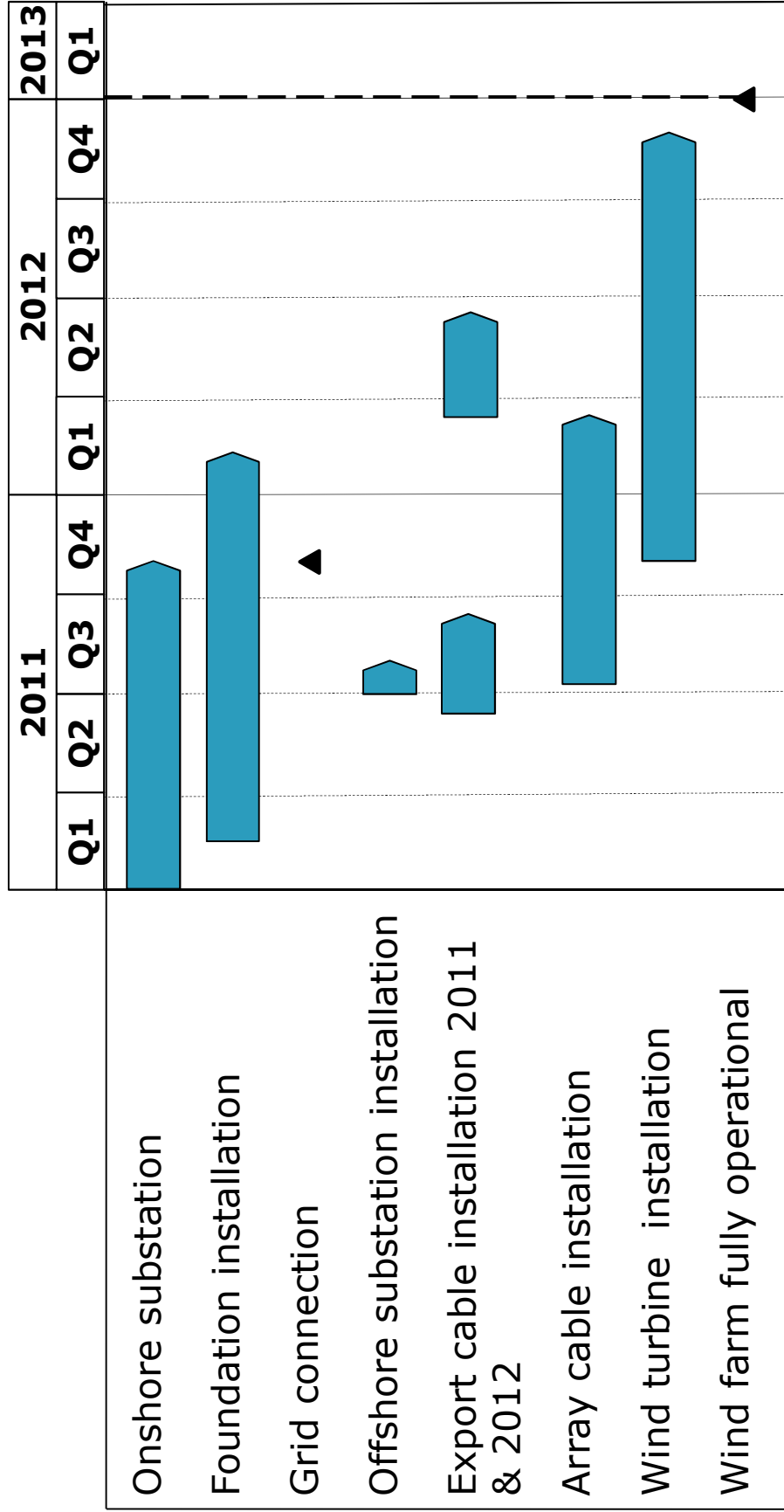
Project gestation



- Apr 01 – First Project Heads of Terms
- Dec 03 – Crown Estate agreement for Round 2 lease
- Jun 05 – Consent applications submitted
- Jun 06 – Swale BC rejected application for substation
- Dec 06 – Offshore consents granted
- Mar 07 – Substation public inquiry - decision Aug 07
- Jul 08 – Shell sold its share to DONG (50%) and E.ON (50%)
- Oct 08 – E.ON sold 40% of its share to Masdar
- Apr 09 – Budget assistance for Round 2 projects
- May 09 – Investment decision & turbine contract
- Jul 09 – Construction of onshore substation started
- Mar 11 – Offshore construction started



Implementation schedule for phase one

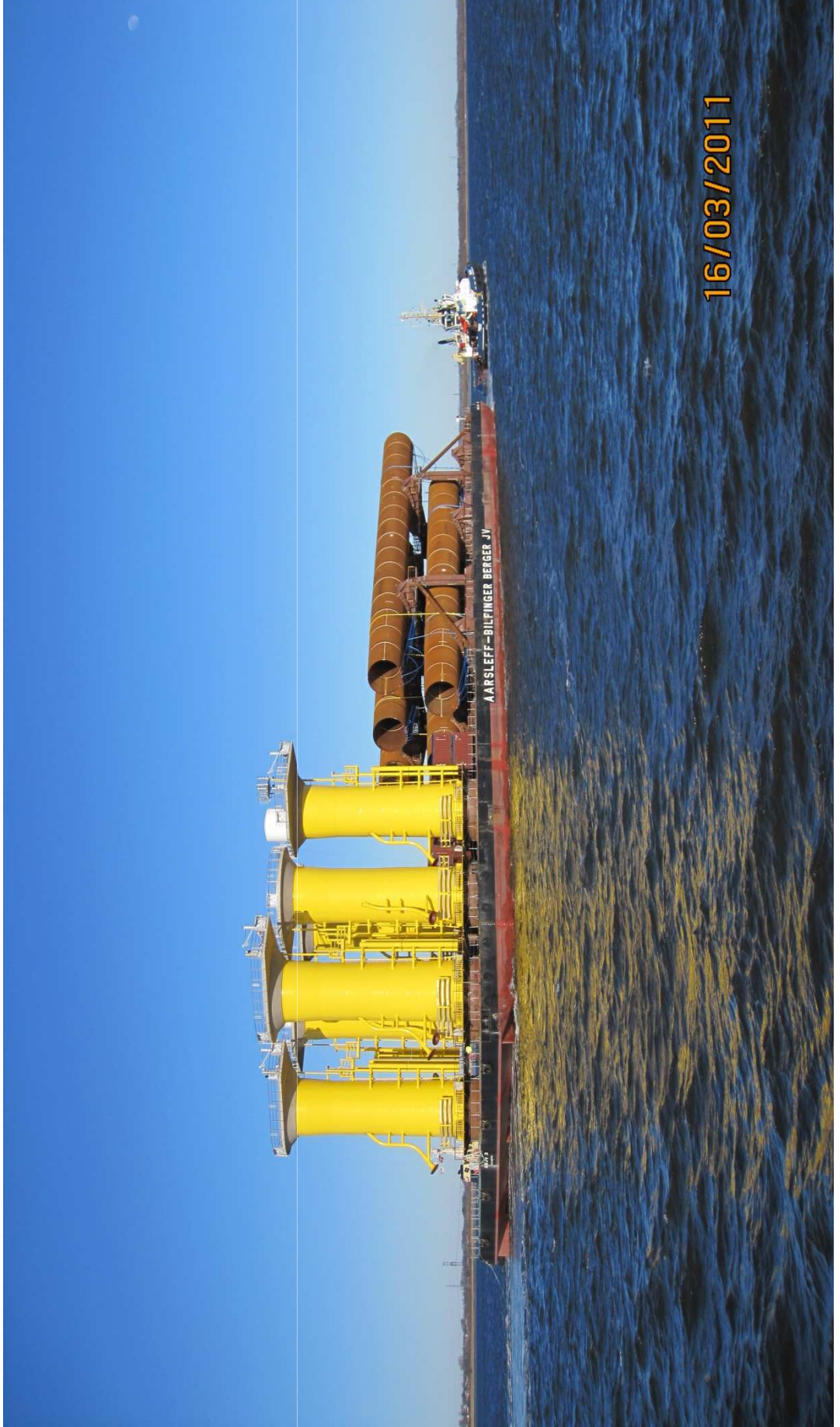


Cleve Hill - 400kV onshore substation





Foundations - monopiles and transition pieces



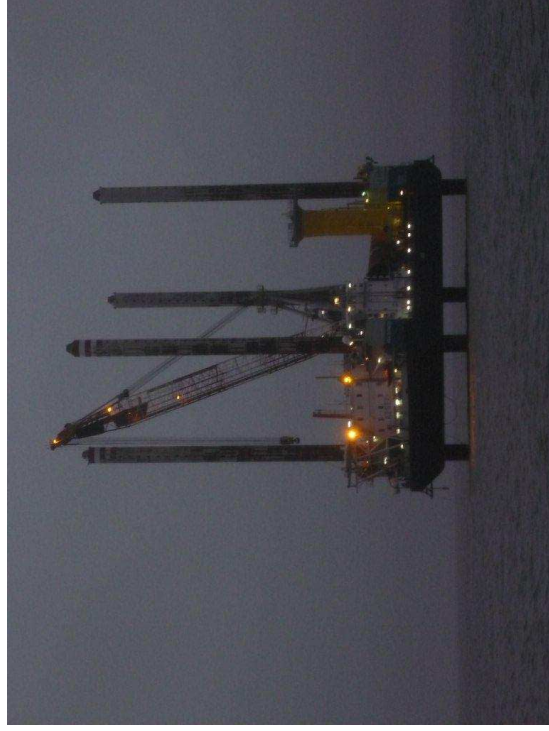
Installation - monopiles and transition pieces



Installation vessels



- Adventure built in China for MPI by COSCO
- In Harwich on 9 May 11



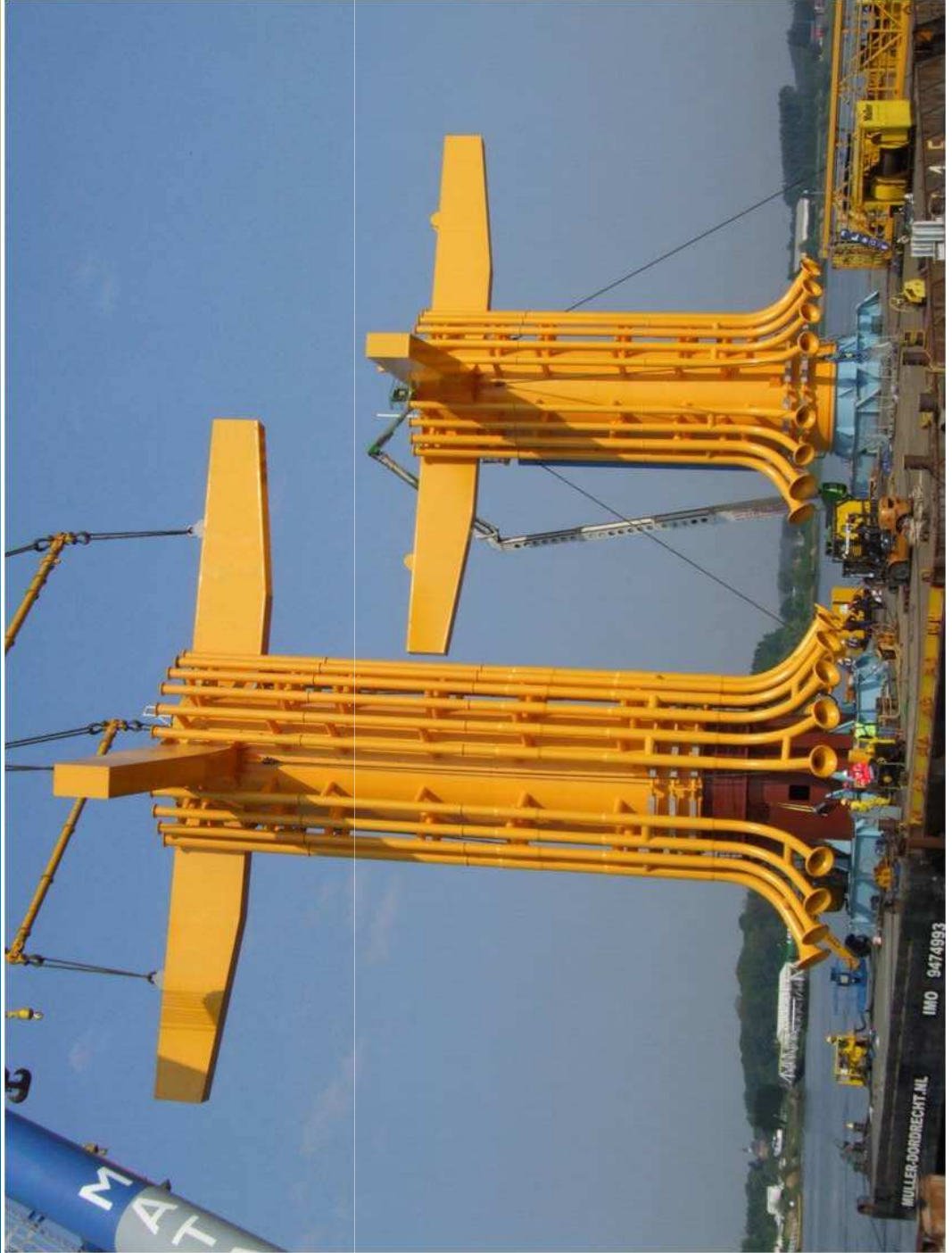
A2Sea SeaWorker

MPI Adventure



- Sea Worker on site Feb 11
- Needed for shallow locations

Offshore substation transition pieces



Offshore substation 1 - transition piece



Matador 3 installing transition piece - 13 May 11



Offshore substation fabrication - Hoboken



Cable installation



Export Cables

- 4 x 54km 150kV cables
- 4600 tonnes each, no joints
- Deep locations and able to beach

Array Cables

- 200km 33kV cable
- Shallow and deep water vessels



Stemat Spirit



Array Cable – shallow – Jan Steen

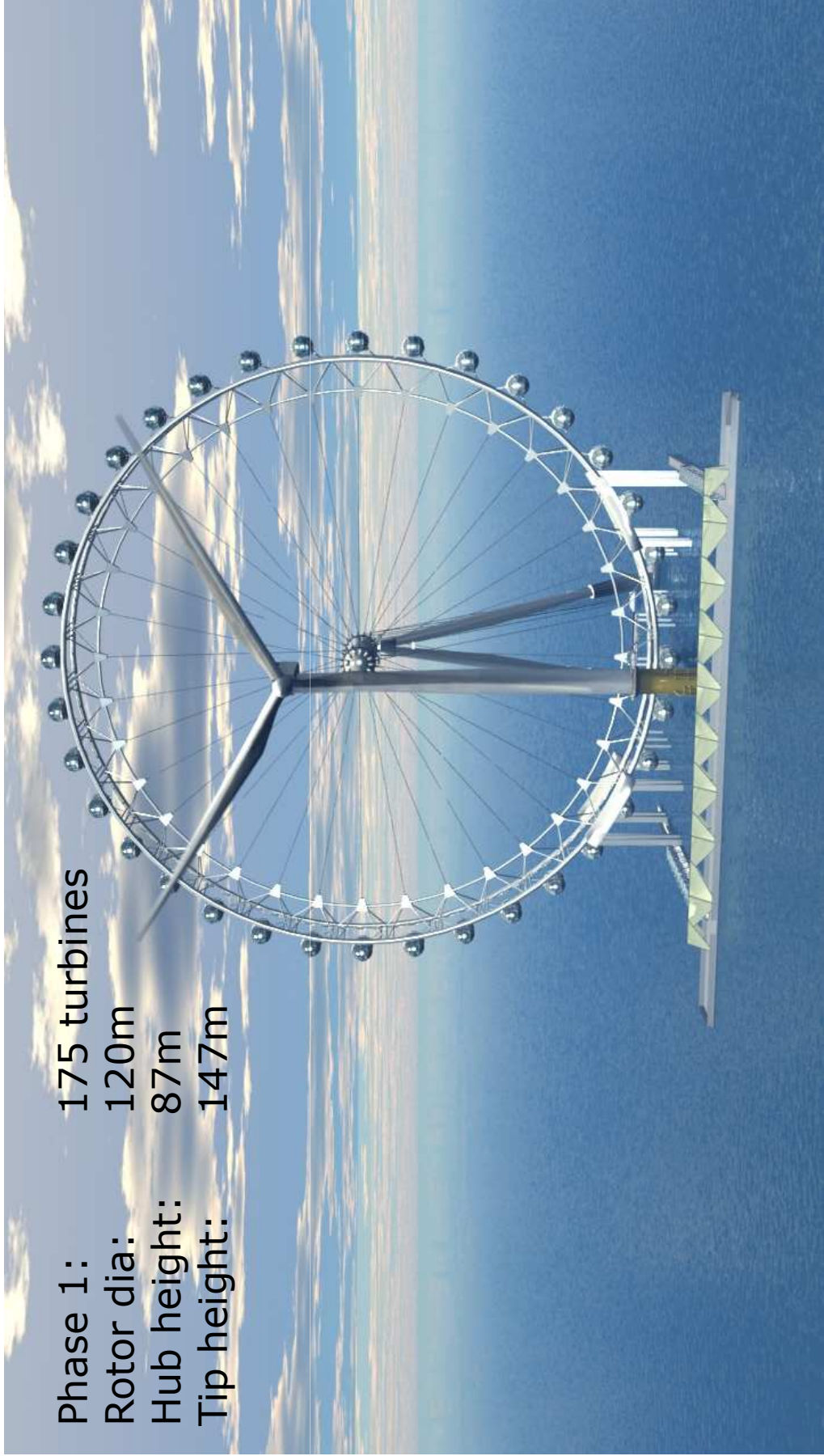


Deep – CS Sovereign

Siemens 3.6MW wind turbines



Phase 1: 175 turbines
Rotor dia: 120m
Hub height: 87m
Tip height: 147m

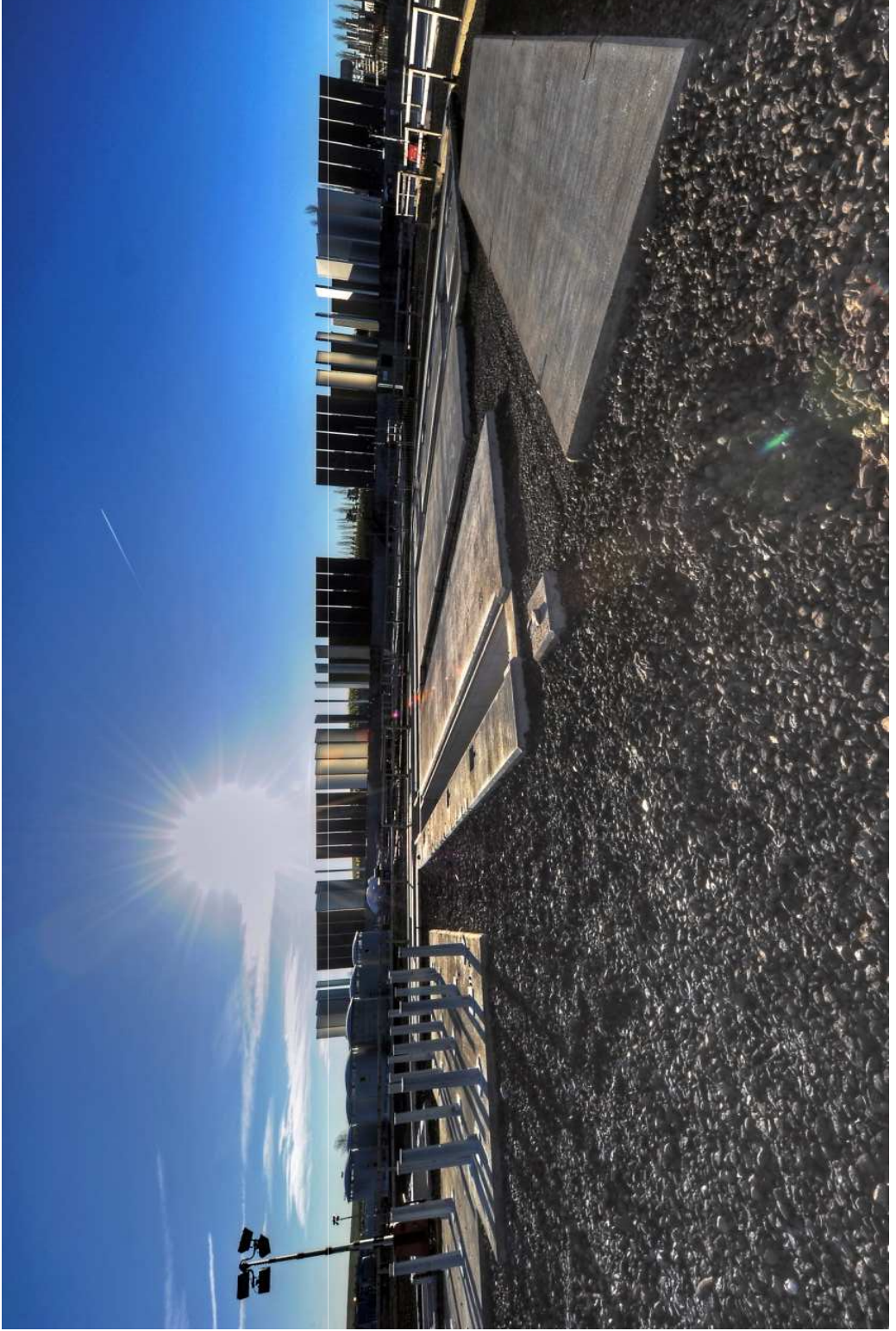


Epilogue



London Array	Phase 1	Complete Farm
Capacity	630MW	1,000 MW
Investment	€2.2bn	Not yet known
Annual energy yield	2,500 GWh	3,400 GWh
Target completion	Dec 2012	Dec 2016
Homes supplied	472,500	750,000
CO2 reduction	900k tonnes	1.4m tonnes
Distance from City Hall	Approx 100km	

Thank you



Subject: Summary List of Actions

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 23 June 2011

This report will be considered in public

1. Summary

1.1 This report sets out for noting any action arising from previous meetings of the Committee.

2. Recommendation

2.1 **That the Committee notes the outstanding actions arising from previous meetings of the Committee, as listed below.**

Meeting of 6 April 2011

Minute item	Subject and action required	Status	Action by	Completion Date
5.	<p>Future of the London Development Agency's Environment Work.</p> <p>The Committee noted that Isabel Dedring and Martin Powell undertook to provide the following information:</p> <ul style="list-style-type: none"> Details of the 2011/12 budget for the environment work when finalised, including what it is to be spent on as well as where it comes from, along with a latest revised budget for 2010/11, showing what reductions there had been on the original budget and whether funds are to be carried over into 2011/12; 	The Chair of the Committee has written to the Mayor's Director of Environment and the London Development Agency's Director of Environment.	Mayor's Director of Environment and the London Development Agency's Director of Environment	Ongoing

	<ul style="list-style-type: none"> • Details of green spaces funding as part of the Great Outdoors programme; • A note on the range of sources to fund and otherwise resource tree planting as part of RE:LEAF; • Details of where planning guidance or other protection is needed to protect elements of the London-wide Green Grid; • A copy of the Design for London and Trees and Design Group publication, 'The Canopy', a design manual for tree planting. 			
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Meeting of 13 January 2011

Minute item	Subject and action required	Status	Action by	Completion Date
6.	<p>Mayor's Air Quality Strategy. The Committee requested from the Mayor's Environment Advisor the working assumption of modal shift to be achieved by 2015.</p>	Officers have written to the Mayor's Environment Advisor.	Mayor's Environment Advisor	Ongoing

List of appendices to this report:

None

<p>Local Government (Access to Information) Act 1985 List of Background Papers: Agenda and Minutes from 13 January 2011 and 6 April 2011</p>	
Contact Officer:	Dale Langford, Committee Officer
Telephone:	020 7983 4415
E-mail:	dale.langford@london.gov.uk

Subject: The Environmental Legacy of the Olympic Park

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 23 June 2011

This report will be considered in public

1. Summary

- 1.1 This report sets out the background to the environmental benefits and impacts of the Olympic Park in the years after the Games, for a discussion with representatives from the Olympic Park Legacy Company (OPLC) and other relevant organisations.

2. Recommendation

- 2.1 **That the Committee notes this report as background to hearing from and putting questions to invited guests.**

3. Background

- 3.1 The London 2012 programme is divided into three phases:

- Preparation – building the venues and facilities;
- Staging – putting on the Games and events; and
- Legacy – the lasting benefits of London 2012.

The period between staging and legacy, and the work in that period to secure the legacy, is known as the 'legacy transition'.

- 3.2 London's 2012 Games bid spoke of 'a legacy that will set new standards for sustainable development'. Among the legacy promises were 'to deliver a sustainable Games and to develop sustainable communities' and 'to make the Olympic Park a blueprint for sustainable living'.
- 3.3 The Olympic Delivery Authority (ODA) is completing its work of construction and landscaping on the Olympic Park site. The work has been done with the legacy in mind, and much of the fitting out specifically for the Games has been done on a temporary basis.
- 3.4 The Olympic Park Legacy Company is the public sector, not-for-profit organisation responsible for the long-term planning, development, management and maintenance of the Olympic Park and its facilities after the London 2012 Games. The Mayor is currently consulting on his plans, under the Localism Bill, to create a Mayoral Development Corporation (MDC), for that area.

- 3.5 After the Games, the Olympic Park will become the Queen Elizabeth Olympic Park, a new neighbourhood of over 10,000 homes, with businesses providing 8 to 10,000 jobs, plus community and sporting facilities. The transition process will take many years, with its three phases set to begin in 2013, 2020 and 2030. Setting measurable sustainability targets and securing the infrastructure to achieve sustainability goals are priorities for the OPLC in the first five years.
- 3.6 Many private companies and developers are and will be involved in the delivery of the Olympic Park and its legacy conversion and use. Contractors delivering crucial parts of the infrastructure include Sustainability Partners such as BT, EDF and Cisco.

Other work by this Committee

- 3.7 The investigation of the environmental legacy of the Olympic Park follows two previous reports by this Committee on the Olympics. In 2008, the report *The environmental sustainability of the London 2012 Olympic and Paralympic Games* largely examined the preparation phase. In 2010, the report *Going for Green* examined progress towards a sustainable staging phase. The current investigation is therefore directed at the legacy phase. Another aspect of the legacy, the realisation of carbon savings through wider take-up of London 2012's low-carbon ways of working, is being evaluated as part of the follow-up to the *Going for Green* report.

4. Issues for Consideration

- 4.1 The Queen Elizabeth Olympic Park will have environmental impacts through its energy use and generation, its biodiverse and other green space, its generation and handling of waste, and its use of water.

Energy and carbon emissions

- 4.2 The Olympic venues and facilities have been constructed to energy-efficiency standards – there is a further opportunity to ensure energy efficiency as they are converted to legacy use. Also, the carbon emissions and other environmental effects of the legacy energy demand will be affected by the amount and type of on-site energy generation.

Green space

- 4.3 It is currently a planning condition of the Olympic Park that it has 45 hectares of biodiverse green space, and there are also plans for a further 102 hectares of Metropolitan Open Land. Under the MDC proposals, the Olympic Park Legacy Company is to have its own planning powers.

Air quality

- 4.4 Transport to and around the park, on-site energy generation, and construction work during the transition years will be among the potential sources of air pollutants.

Waste and water

- 4.5 The homes, businesses and community facilities in the Queen Elizabeth Olympic Park will require substantial amounts of water and materials, which will need to be managed after use.

Function of this meeting

- 4.6 The Committee's 23 June meeting is an opportunity for the Committee to hear from the Olympic Park Legacy Company and the Olympic Delivery Authority about the development of plans to make the Olympic Park a 'blueprint for sustainable living'. There will also be an opportunity for Members to hear from partner organisations and experts including BT, the Commission for a Sustainable London 2012 and the London Wildlife Trust.

- 4.7 Guests invited to attend the meeting to answer the Committee's questions include the following:
- Olympic Park Legacy Company – Andrew Altman, Chief Executive;
 - Olympic Delivery Authority – Simon Wright, Director of Infrastructure and Utilities;
 - Commission for a Sustainable London 2012 – Shaun McCarthy, Chair; and
 - Representatives from BT and the London Wildlife Trust.
- 4.8 Following this meeting, the Committee will consider a report outlining its findings and potentially making recommendations to improve the environmental legacy of the Olympic Park.

5. Legal Implications

- 5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

- 6.1 There are no financial implications arising from this report.

List of appendices to this report:

None

Local Government (Access to Information) Act 1985
List of Background Papers: None
Contact Officer: Ian Williamson Telephone: 020 7983 6541 E-mail: ian.williamson@london.gov.uk

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Subject: Update on a Possible Inner London Clean Air Zone

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 23 June 2011

This report will be considered in public

1. Summary

- 1.1 This report sets out the back ground to a discussion with expert guests on the feasibility of a Clean Air Zone in inner London.

2. Recommendation

- 2.1 **That the Committee notes the report as background to discussing with expert guests the feasibility of a Clean Air Zone in inner London.**

3. Background

- 3.1 In response to the Mayor's draft Air Quality strategy the Committee considered the role of additional London-wide measures, but was concerned to focus action where the problem is most acute. Accordingly, the Committee recommended that low emission zones be established to tackle pollution hotspots, supported by the Mayor to ensure consistency and avoid confusion. The draft strategy stated that the Mayor would work with boroughs that wished to establish local low emission zones. However, the option for a low emission zone covering inner London was not taken forward, and the Mayor's adviser suggested to us that further analysis had shown that this would not be cost-effective.
- 3.2 However, we were also told that if a number of boroughs were interested in implementing local low emission zones (LEZ), the GLA would support the development of a common framework. To advance the debate and enable an assessment of the merits of local, inner and London-wide LEZ approaches, we recommended that the analysis of the costs and benefits of these schemes be published, including the costs to Londoners of replacing or retrofitting vehicles. This should include the feasibility of adopting schemes such as those operating in Germany, which do not require expensive infrastructure.
- 3.3 The final version of the Air Quality strategy committed the Mayor to work with boroughs to assess the feasibility and cost effectiveness of a central London LEZ in the Congestion Charging zone

4. Issues for Consideration

4.1 The Committee will put questions to:

- Peter Wright, Policy Manager (Planning), Transport for London; and
- Simon Birkett, Director, Clean Air in London.

5. Legal Implications

5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

6.1 There are no financial implications arising from this report.

List of appendices to this report:

None

Local Government (Access to Information) Act 1985
List of Background Papers: None
Contact Officer: Richard Derecki Telephone: 020 7983 3899 E-mail: richard.derecki@london.gov.uk

Subject: Electric Vehicles

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 23 June 2011

This report will be considered in public.

1. Summary

- 1.1 This report sets out background information on electric vehicles (EVs), their perceived environmental benefits and the Mayor's plans to develop an electric vehicle network in London, in preparation for a Committee briefing with the Mayor's Director of Environment and other invited guests on 12 July 2011.

2. Recommendation

- 2.1 **That the Committee notes this report as background to the public briefing session to be held on 12 July 2011.**

3. Background

- 3.1 EVs have existed for over 100 years and have been extensively researched since the 1960s. Concerns about the price and security of oil supply and the need to better understand how EVs might contribute to reducing reliance on carbon-based fuels and the long term reduction of the UK's carbon dioxide (CO₂) emissions have acted as a spur to electric vehicle development.¹
- 3.2 EVs can offer benefits of improved air quality in urban areas through zero tailpipe emissions of nitrogen oxides (NO_x), sulphur oxides (SO_x) and particulates (PM₁₀). But on the down-side, EVs can produce higher emissions levels of NO_x and SO_x as a result of power sector emissions (principally from coal plants), and there is the potential for these emissions to contribute to 'acid rain'.² However these impacts could be reduced over time with increased use of renewable energy.
- 3.3 EVs are thought to offer significant CO₂ and greenhouse gas emissions reductions over time compared to conventional petrol/diesel fuelled vehicles.³ But a recent study commissioned by the Low Carbon Vehicle Partnership challenges this position pointing to the potential for EVs to produce

¹ Investigation into the Scope for the Transport Sector to Switch to Electric Vehicles and Plug-in Hybrid Vehicles, published by the Department for Business Enterprise and Regulatory Reform and Department for Transport, October 2008

² Ibid, p13

³ Based on the full life cycle of the vehicle and taking account of emissions from power generation and emissions relating to production and disposal. Ibid, p13

higher emissions than conventional vehicles over their lifetime because of the energy consumed in making their batteries.⁴

- 3.4 There are two types of EVs which potentially offer lower CO₂ emissions than normal internal combustion engine vehicles:
- All-electric EVs are vehicles with an electric motor powered by a rechargeable battery, and
 - Plug-in Hybrid Electric Vehicles (PHEVs), are powered by both mains chargeable batteries and a normal internal combustion engine. It is likely that PHEVs could be run in all-electric mode for short to medium distance journeys with the petrol engine used for longer journeys.⁵
- 3.5 There are around 71,000 plug-in and hybrid EVs in the UK, with just under a quarter registered in London - 2,100 of the former and 14,600 of the latter.⁶

National policy

- 3.6 The Government has a range of policies to support the development of EVs and their adoption into the wider commercial market, including the technologies related to their manufacture, maintenance and future development.⁷ It published the UK strategy for Ultra Low Carbon Vehicles setting out an overview of the Government's activity over the next 5 years for research, demonstration and incentives, for consumers and industry.⁸
- 3.7 The national programme of work on low carbon vehicles is driven forward by the Department for Transport and Cenex, a UK Centre of Excellence for low carbon and fuel cell technologies, established with support from the Department for Business, Innovation and Skills. Close liaison is maintained with the Department of Energy and Climate Change (DECC) which brings together energy policy and climate change mitigation policy.⁹ DECC sets the overall policy framework to reduce carbon emissions and support emission reduction policies.

The Mayor's Electric Vehicle Delivery Plan

- 3.8 The Mayor is committed to the introduction of EVs in London on a wider scale. On 19 May 2009 he launched an Electric Vehicle Delivery Plan for London (EVDP), pledging to make London the electric car capital of Europe.¹⁰ In the EVDP the Mayor committed to delivering:
- 100,000 EVs on London's streets as soon as possible;
 - 25,000 charge points across London by 2015; and
 - 1,000 EVs in the GLA fleet by 2015.¹¹
- 3.9 The EVDP is one strand of the Mayor's overall strategy to decarbonise transport and improve air quality in London.¹² The EVDP sits alongside the Mayor's draft London Electric Vehicle

⁴ Preparing for a Life Cycle CO₂ Measure, May 2011 <http://www.lowcvp.org.uk/resources-library/reports-and-studies.asp>

⁵ <http://www.dft.gov.uk/pgr/scienceresearch/technology/lowcarbonelecvehicles/>

⁶ As at November 2010

⁷ See <http://www.dft.gov.uk/pgr/scienceresearch/technology/lowcarbonelecvehicles/#>

⁸ [The strategy was published jointly by the Department for Transport \(DfT\) and the Department for Business Enterprise and Regulatory Reform \(BERR\).](#)

⁹ Energy policy was previously dealt with by the former Department for Business, Enterprise and Regulatory Reform (BERR). Climate change mitigation policy was previously dealt with by the Department for Environment, Food and Rural Affairs

¹⁰ [Mayor's press release 19 May 2009](#)

¹¹ [An electric vehicle delivery plan for London, May 2009, pages 3, 21](#)

¹² [An electric vehicle delivery plan for London, May 2009, page 3](#)

Infrastructure Strategy (LEVIS).¹³ The LEVIS sets out an overarching strategy for delivering the electric vehicle charging infrastructure, and provides targets and processes for its roll-out across London.

4. Issues for Consideration

Programme delivery and funding

- 4.1 In the EVDP the Mayor committed to a phased delivery of the infrastructure up to 2015, providing 2,500 charging points in on-street and off-street public locations and 22,500 located in employers' car parks and retail and leisure locations.¹⁴ The Mayor estimated that it would cost £60 million to deliver the infrastructure requirements set out in the EVDP, with investment coming from a mixture of public and private sector sources (£40 million and £20 million respectively).¹⁵ Following the May 2010 election and the Comprehensive Spending Review, public sector commitment was revised down to around £16 million - £6.6 million from Transport for London (TfL) and £9.3 million from the Government's 'Plugged in Places' grant. This funding is expected to deliver at least 1,300 charging points by 2013, through Source London, launched on 26 May 2011.^{16,17}
- 4.2 The understanding is (from the Mayor's responses to Assembly Members' questions and officer discussions with project personnel) that revision to the quantities and types of charging points to be installed, are in part due to a better understanding of evolving technology, and of London's electric vehicle network requirements since the EVDP and LEVIS were published in 2009.

Environmental benefits

- 4.3 According to the LEVIS achieving targeted rates of electric vehicle adoption could save up to 80,000 tonnes of CO₂ each year by 2020, and a total of up to 400,000 tonnes up until that date. EVs may also reduce annual NO_x emissions by up to 100 tonnes across London, lower PM₁₀ emissions, and generate minimal noise pollution.¹⁸ Initiatives outlined in the Mayor's Transport Strategy and the Climate Change Mitigation and Energy Strategy alongside current Government commitments could result in annual transport-related CO₂ emissions of 6.4 million tonnes.¹⁹ Annual NO_x emissions are likely to reduce to around 10,000 tonnes in 2015 through the implementation of a range of measures, and PM₁₀ emissions in central London to around 105,000 tonnes.²⁰

Areas for exploration during the briefing

- 4.4 Members would benefit from a public briefing to further explore:
- Questions and issues around progress of delivering the EVDP
 - *What has driven changes to the delivery programme?*
 - *What are the barriers to progressing electric vehicle take up in London and how might these be mitigated?*
 - What are the environmental benefits to be gained from wide scale electric vehicle use?

¹³ [Published December 2009](#)

¹⁴ [An electric vehicle delivery plan for London, May 2009, page 3](#)

¹⁵ [An electric vehicle delivery plan for London, May 2009, page 11](#)

¹⁶ [Mayor's Question Time, 15 December 2010. See question 3989/2010](#)

¹⁷ For more information on delivery and Source London, see Mayoral press release <http://www.london.gov.uk/priorities/transport/green-transport/electric-vehicles>

¹⁸ [London Electric Vehicle Infrastructure Strategy, page 41](#)

¹⁹ Paragraph 589, Transport Strategy http://www.london.gov.uk/sites/default/files/MTS_Chapter_5_pt5.pdf

²⁰ Chapter 5, Mayor's Air Quality Strategy <http://www.london.gov.uk/sites/default/files/Air%20Quality%20Strategy%20v3.pdf>

- *What are the tensions in delivering environmental benefits for London through electric vehicle car use?*
- *What benefits can the delivery programme in its current form realistically seek to achieve?*
- (From an environmental perspective), the value for money of delivering an electric vehicle charging network for London
- *Do the environmental benefits to be gained warrant the Mayor’s level of financial investments to date via TfL?*

Guests

- 4.5 It is suggested that the Committee receive a briefing and put questions to Kulveer Ranger, the Mayor’s Director of Environment. It is likely that Mr Ranger will be supported by officers from TfL leading on delivery of the project.
- 4.6 To help provide a balanced discussion on the issue Members might want to consider also inviting the following guests:
- A car manufacture representative such as Nissan or BMW to provide an industry perspective;
 - An academic/environmental professional to provide more detailed information on the environmental impacts;
 - A representative from the Society of Motor Manufacturers and Traders to provide insight on technological developments and market barriers;
 - A motoring expert to help provide a consumer perspective.
- 4.7 A summary report will be published following the session.

5. Legal Implications

- 5.1 The Committee has the power to do what is recommended in this report.

6. Financial Implications

- 6.1 There are no direct financial implications arising from this report.

List of appendices to this report:

None.

Local Government (Access to Information) Act 1985	
List of Background Papers: None	
Contact Officer:	Carmen Musonda
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Subject: Rapporteur Review of the Removal of Vegetation from Railway Embankments

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 23 June 2011

This report will be considered in public

1. Summary

- 1.1 This report sets out a proposal to appoint a rapporteur to review guidelines for the removal of vegetation from railway embankments.

2. Recommendation

- 2.1 **That the Committee recommends to the Business Management and Administration Committee the appointment of Darren Johnson AM as a rapporteur to review guidelines for the removal of vegetation from railway embankments, with the term of reference as set out in paragraph 4.2.**

3. Background

- 3.1 Lineside vegetation acts as wildlife corridors, provides vital urban greening, and provides screening for residents living close to the lines. There are over 740 kilometres of surface railway lines in London. A significant proportion of which constitutes habitat of wildlife interest and important areas of urban biodiversity. A number of lineside tracts have been identified as Sites of Nature Conservation Importance in London including the stretch of line between New Cross Gate and Forest Hill in Lewisham, a site of Metropolitan Importance, Brackenbury Cutting (Hillingdon), Sydenham Hill Station (Southwark), Stanmore embankment (Harrow), High Barnet embankment (Barnet), East Sutton railway land (Sutton) and various stretches in Islington (collectively identified as of Borough Importance). Some tracts of lineside have local authority protection as green corridors within their planning documents.
- 3.2 The linesides are subject to management by the various railway companies, most particularly Network Rail, Transport for London and London Underground, to ensure that they are operationally safe. There is extensive guidance as to how linesides are to be managed. However a recent briefing paper from the London Wildlife Trust¹ and letters to individual Assembly Members highlights that lineside management can sometimes be controversial due to the scale of the cutting back, the timing, a perceived lack of consultation and impacts of works on local residents.

¹ Railway lineside management, London Wildlife Trust, July 2010

4. Issues for Consideration

- 4.1 The rapporteur proposes to collect examples of where the management of lineside vegetation has caused resident upset and to review existing guidance provided by Network Rail, Transport for London, London Underground and the Train Operating Companies. To this end the rapporteur will collect examples from Assembly Members, write to relevant residents groups, and the boroughs.
- 4.2 The proposed term of reference for this review is:
- To review the processes by which railway embankments are managed.
- 4.3 Written guidance will be sought from relevant stakeholders and meetings will be held with Transport for London and Network Rail to discuss how the guidance is acted upon and how residents' concerns are responded to. A short report will be produced collating the information received with recommendations to the train operators as appropriate.
- 4.4 If the Committee agrees to this proposal then this paper will need to be agreed at the 20 July 2011 meeting of the Business Management and Administration Committee. Letters to stakeholders will go out following approval and meetings will take place in August. A draft report will be produced for Member consideration by October.

5. Legal Implications

- 5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

- 6.1 There are no financial implications arising from this report.

List of appendices to this report:

None

Local Government (Access to Information) Act 1985
List of Background Papers: None
Contact Officer: Richard Derecki Telephone: 020 7983 3899 E-mail: richard.derecki@london.gov.uk

Subject: Waste Financial Reward and Compulsory Recycling Schemes

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 23 June 2011

This report will be considered in public.

1. Summary

- 1.1 This report seeks the Committee's agreement to the findings report on waste financial reward and compulsory schemes.

2. Recommendation

- 2.1 **That the Committee formally agrees the report *Carrots and Sticks: A review of waste financial reward and compulsory recycling schemes*.**

3. Background

- 3.1 The Environment Committee agreed at its meeting on 8 September 2010 to conduct an inquiry looking at the extent to which personal waste financial incentive schemes impact on recycling performance.

- 3.2 The terms of reference agreed were to:

- Explore the impact of waste financial incentive schemes on recycling performance;
- Consider whether waste financial incentive schemes are necessary to improve recycling rates;
- Identify examples of best practice and lessons learned; and
- Make recommendations on how waste financial incentive schemes might best be applied to London.

- 3.3 The Committee discussed issues around the role and impact of waste financial reward and compulsory schemes at a public meeting on 4 November 2010, with the following guests:

- Simon Smith, Commercial Director Recycle Bank;
- Sue Igoe, Managing Director Recycle Bank;
- Rob Crumbie, Marketing Manager Recycle Bank;
- Terry Gould, Head of Public Protection;
- Andrew Richmond, Waste Policy & Programmes Manager;
- Nick Cliffe, Marketing Manager, Closed Loop Recycling; and
- Nicola Cross, Environmental Services Manager, London Borough of Barnet.

4. Issues for Consideration

- 4.1 A copy of the draft report *Carrots and Sticks: A review of waste financial reward and compulsory recycling schemes* is attached as **Appendix 1** for the Committee's consideration and formal agreement. Officers confirm that the report and its findings fall within the terms of reference.

5. Legal Implications

- 5.1 The Committee has the power to do what is recommended in this report.

6. Financial Implications

- 6.1 There are no direct financial implications arising from this report.

List of appendices to this report:

Appendix 1 - *Carrots and Sticks: A review of waste financial reward and compulsory recycling schemes*

Local Government (Access to Information) Act 1985
List of Background Papers: Minutes of the Environment Committee dated 8 September 2010 Minutes of the Environment Committee dated 4 November 2010
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Carrots and Sticks

A review of waste financial reward and compulsory recycling schemes

May 2011

Carrots and Sticks

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Roger Evans	Conservative
Nicky Gavron	Labour
Mike Tuffrey	Liberal Democrat

Terms of Reference

The Environment committee agreed the following terms of reference for its investigation on 8 September 2010:

- Consider the impact of waste financial incentive schemes on recycling performance;
- Identify examples of best practice and lessons learned; and
- Make recommendations on how such schemes might be applied to London

The Committee would welcome feedback on this report. For further information contact:

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Foreword



The increasing costs of waste disposal and threat of financial penalties from the European Union, for failing to meet the landfill diversion targets it has set, are two strong reasons why a concerted effort is needed to boost recycling rates in the capital. There are others. Not least is the positive impact diverting waste away from landfill can have on the environment.

Boroughs have done very well to improve recycling rates over the past decade but we are now at the stage where that improvement is beginning to plateau. There are a number of reasons for this, including the nature of housing in London. Flats account for over 50 per cent of properties. An overriding challenge we face is improving recycling in flats and estates across the capital, where recycling rates are lowest, typically around 10 per cent.

We need to remain open to exploring different ways to further improve London's recycling performance. Financial incentive schemes are increasingly being used as a way of encouraging individuals to recycle more, and supporters of them believe that they boost recycling rates. This report - *Carrots and Sticks* - evaluates the merits of the Recyclebank reward-based and compulsory approaches to incentivising individuals to recycle. It explores their impact on recycling performance and considers the London-specific challenges the schemes would need to tackle.

We found that recycling rates had improved quite dramatically in boroughs operating either scheme. But less certain is whether the dramatic increases can be sustained, and whether individuals are prompted to manage their waste more sustainably in the long term. We need more data to properly determine the impact of financial incentive schemes on recycling rates.

Communications has a pivotal role to play. It contributes to the successful delivery of a scheme, but more importantly, can stimulate and help maintain an interest in how individuals can better manage their waste and contribute to a cleaner environment.

Whichever approach is adopted, boroughs should aim to ensure that that the scheme targets challenges we face in London, provides value for money, and encourages changes in behaviour and attitudes to managing waste for the better over the long term.

A handwritten signature in black ink, appearing to read 'Darren Johnson'.

Darren Johnson AM

Deputy Chair, London Assembly Environment Committee

Executive Summary

This report presents findings from the London Assembly's Environment Committee inquiry into the value of financial incentive schemes in boosting recycling rates in London.

While London has made great strides in recycling more of its municipal waste, the rate of progress could be improved. London currently recycles 32 per cent of its municipal waste: a significant improvement in a decade, but still below the national average of 39 per cent and the lowest of all nine English regions. Increasing recycling activity in flats and on estates (around 50 per cent of the London's housing stock) will be crucial to any further improvements in London's recycling performance.

Supporters of financial incentive schemes – the Mayor, local authorities who have tried them, central government and Recyclebank (an American company that has launched schemes across the UK) – believe that such schemes significantly boost recycling rates. They believe that providing incentives can, in the short term, help local authorities to meet EU waste targets and avert financial penalties. In the long term, they say that incentives can bring about a change in people's attitude and behaviour to manage waste more sustainably.

The Mayor also favours a reward-based approach to incentivising individuals to recycle and is keen to see a roll-out of the Recyclebank model across London.

Using four key indicators – impact on recycling rates, costs, public perception and tackling London-specific challenges – this report evaluates the merits of the Recyclebank model of rewarding recycling. To provide some counter-balance, the report also considers the merits of the compulsory approach to incentivising recycling.

The report points out that there are positive aspects to both types of schemes. Recycling rates have improved quite dramatically in boroughs where they have been introduced.

But there are also drawbacks. The high costs associated with implementing and running the Recyclebank scheme can be off-putting. There are concerns that incentivising to recycle can encourage consumerism, and drive individuals to generate more waste to boost points and maximise their rewards. Awarding shopping vouchers as rewards for recycling may send messages counteracting

any waste prevention messages local authorities may also be promoting. The schemes may be susceptible to increased contamination rates: people may be tempted to set out items for recycling that cannot be recycled locally, either in their bid to gain rewards or to avoid financial penalty.

The report calls for a more comprehensive evidence base to be developed to properly determine the impact of incentive schemes over the long term. The Committee is concerned at the lack of evidence to support the hypothesis that schemes incentivising people to recycle can change attitudes or behaviour in the long term.

London faces unique challenges, not least, with its high proportion of flats and large transient population. The report points out both types of incentive scheme will need to address these challenges if they are to work effectively in London. Boroughs will need to tailor schemes to their housing stock; they will have to be able to identify cost-effective improvements to help drive up recycling participation and capture rates. A real emphasis on communications will also be needed. Effectively communicating the value of recycling and the need to manage waste sustainably will be key to the success of the schemes. The messaging will need to be consistent, continuous and targeted.

1 Introduction

- 1.1 This report presents findings from the Environment Committee inquiry, which looked at the value of financial incentive schemes in boosting recycling rates in London. These findings are intended to inform ongoing debate on the subject within London, and will also be relevant to the Government's review of national waste policy.¹
- 1.2 The terms of reference for the inquiry were to:
- Consider the impact of waste financial incentive schemes on recycling performance;
 - Identify examples of best practice and lessons learned; and
 - Make recommendations on how such schemes might be applied to London.
- 1.3 London has made great strides in improving recycling, but the rate of progress could be improved. The average recycling rate has increased by 24 per cent over the last ten years, up from eight per cent in 2000/01 to 32 per cent in 2009/10. But London's recycling rate remains the lowest of all nine English regions and below the national average of 39 per cent.² Around two thirds of London boroughs are performing below the national average, and over half below London's average of 32 per cent. In contrast, the amount of municipal waste London produces is amongst the highest of the regions, with around half being sent to landfill and less than a third recycled. Borough-level recycling performance across London is mixed. Whilst many areas continue to make good progress each year, in some cases, increases in recycling rates have slowed.³ In other cases recycling rates have gone down.⁴
- 1.4 The overriding challenge in inner London will be to improve recycling rates in flats and on estates. Flats account for around half of London's housing stock. Most of these can be found in inner London boroughs. Recycling and composting in flats and estates is low, typically around

¹ The Government announced a review of waste policy in June 2010 and is due to report preliminary findings shortly. The use of waste financial incentives to boost recycling is likely to form part of further work to develop the Government's policy on waste.

² DEFRA statistics <http://www.defra.gov.uk/statistics/files/mwb200910-annual.xls> See Table 5.

³ For example, Richmond upon Thames, Southwark, Hammersmith & Fulham, Hackney, Lambeth. See Capital Waste Facts <http://www.capitalwastefacts.com/>

⁴ For example Lewisham, Wandsworth, Waltham Forest. See Capital Waste Facts <http://www.capitalwastefacts.com/>

10 per cent.⁵ Increasing recycling in these properties is imperative if London's average recycling rate is to improve.

- 1.5 One way to improve London's recycling rates might be to introduce financial incentive schemes. Supporters of such schemes – local authorities who have tried them, the Mayor, central government and Recyclebank – believe that financial incentive schemes can significantly boost recycling rates. In the short term, according to their supporters, such incentive schemes can help local authorities meet EU targets and avert financial penalties. In the longer term, they believe, waste financial incentives can change people's behaviour and thus help authorities to manage waste more sustainably. Local authorities across England are looking at using these schemes to help drive up recycling rates and encourage individuals to do the same.
- 1.6 The Mayor is keen to see a roll-out of the Recyclebank model or similar schemes across London. He is committed to working with waste authorities to provide incentives for Londoners to recycle and compost.⁶ He favours a reward-based approach to incentivising individuals to recycle and Recyclebank provides such an approach.
- 1.7 This report therefore explores the merits of the Recyclebank model, and to provide some counter-balance, the compulsory approach to incentivising recycling. A number of London boroughs have used the compulsory recycling model for over five years.
- 1.8 Throughout the report we refer to written evidence submitted to the Committee by a range of stakeholders. A full list of stakeholders, along with copies of their submissions, has been published in a separate document accompanying this report. We also draw on the public discussion session held by the Environment Committee on 4 November 2010. Representatives from Recyclebank, the Royal Borough of Windsor and Maidenhead, the London Borough of Barnet and Closed Loop Recycling attended the session.

⁵ GLA commissioned surveys show average recycling or composting rates in flats and estates to be around 10 per cent or less. See the Mayor's draft Municipal Waste Management Strategy, *London's Wasted Resource* <http://www.london.gov.uk/consultation/waste-strategy>.

⁶ Policy 4.6, The Mayor's draft Municipal Waste Management Strategy, *London's Wasted Resource* <http://www.london.gov.uk/consultation/waste-strategy>

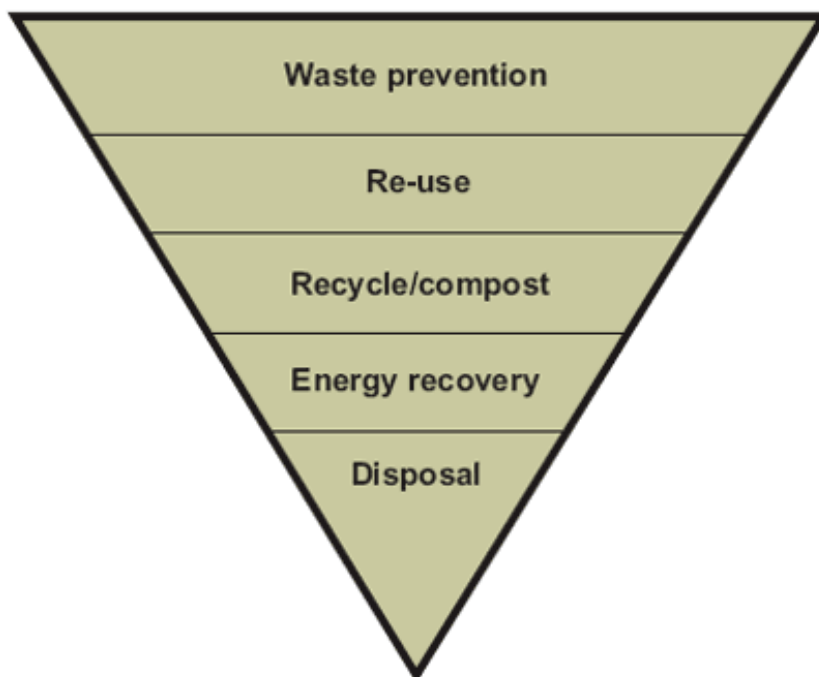
- 1.9 The outcome of our discussions with stakeholders and review of the written evidence we received is ambivalent. On the one hand, we were able to substantiate the premise that providing incentives to recycle can encourage behavioural change. On the other hand, the extent to which the behavioural change can be sustained remains debatable.

2 The policy and financial context

- 2.1 Recycling and composting is one of five methods set out in the Waste Strategy for England 2007 for managing waste in a sustainable way.⁷ The Strategy presents a hierarchical model of five ways to dispose of waste, with waste reduction at the top end of the hierarchy and disposal of waste to landfill at the other. The model is more commonly referred to as the waste hierarchy.

Figure 1

The Waste Hierarchy



Source: *Waste Strategy for England 2007*

- 2.2 Recycling has a key role to play in meeting European Union landfill diversion targets. The EU has set challenging targets which if breached could result in the UK having to pay substantial financial penalties.⁸ The Localism Bill will enable the Government to pass penalties for failing to meet waste recycling targets to those authorities believed to

⁷ The Waste Strategy for England 2007.

<http://www.defra.gov.uk/environment/waste/strategy/strategy07/documents/waste07-strategy.pdf>

⁸ European Landfill Directive 1999/31/EC,

http://ec.europa.eu/environment/waste/landfill_index.htm

have caused or contributed to a breach of the targets.⁹ London needs to increase participation and capture rates for recycling if it is to avert the very real threat of financial penalties.

- 2.3 The 1999 EU Landfill Directive sets limits on the quantity of waste permitted to go to landfill by key dates in 2013 and 2020. It also sets out standard landfill acceptance procedures and sets up a system of operating permits for landfill sites. The objective of the directive is to prevent or reduce as far as possible negative effects on the environment from disposing of waste to landfill, by introducing stringent technical requirements for both.¹⁰
- 2.4 The UK Government introduced two initiatives to help local authorities achieve the landfill targets set in the EU Landfill Directive. The first is the Landfill Allowances Trading Scheme (LATS); the second, Landfill tax.¹¹
- 2.5 LATS sets landfill allowances for each waste disposal authority in England. One allowance represents one tonne of biodegradable municipal waste (BMW) that can be sent to landfill. Obligations under LATS can be met by trading off landfill credits. However, failure to meet the target allowance can trigger fines of up to £150 per tonne of waste.
- 2.6 Landfill tax is a levy applied to waste sent to landfill. It is set at £56 per tonne as of April 2011 and will steadily increase in future years.¹² In 2008/09, 1.9 million tonnes of London's BMW went to landfill, costing an estimated £61 million in landfill tax.^{13, 14} Based on the

⁹ Under Part 2, of the Localism Bill the Government will be able to pass on EU fines for breaches of air quality and waste.

<http://www.communities.gov.uk/localgovernment/decentralisation/localismbill/>

¹⁰ http://ec.europa.eu/environment/waste/landfill_index.htm

¹¹ More information on LATS can be found at

<http://www.defra.gov.uk/environment/waste/localauth/lats/>. More information on landfill tax can be found at

http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?_nfpb=true&_pageLabel=pageExcise_ShowContent&id=HMCE_CL_001206&propertyType=document

¹² The standard rate will rise by £8 per tonne each year between now and 2014/15 <http://www.letsrecycle.com/news/latest-news/general/chancellor-extends-landfill-tax-escalator-until-2014>

¹³ *State of the Environment in London Report* (Latest update August 2010), Environment Agency, p50

¹⁴ The standard (active) rate of Landfill Tax in 2008/09 was £32 per tonne, *Landfill Tax: recent developments*, Antony Seely, 15/12/09, p13,

2008/09 tonnage the cost of landfill tax in London will rise to an estimated £152 million per annum by 2014/15, unless other forms of disposal (such as recycling) increase. This would represent an increase of 149 per cent.

- 2.7 The Government has also set correspondingly challenging targets for recycling and composting to help meet the EU landfill diversion targets and avoid financial penalties. The national strategy sets a target to recycle and compost at least 40 per cent of household waste by 2010, 45 per cent by 2015 and 50 per cent by 2020.¹⁵ England recycled and composted 39.7 per cent of municipal waste during 2009/10, narrowly missing the 40 per cent target set for 2010.
- 2.8 The national targets are mirrored in the Mayor's draft Municipal Waste Management Strategy.¹⁶ Recycling and composting is a key focus for the Mayor, and is one of the six main policy areas singled out for focused action in the Strategy. Reducing the amount of waste sent to landfill is also a key focus. The Mayor has set a target to achieve zero municipal waste to landfill by 2025.
- 2.9 Recycling also has an important part to play in the wider programme of sustainable waste management. Recycling can help divert waste away from landfill. In particular, it can play an important role in conveying the message of sustainable waste management to the public. The Committee was told that, of all the elements of the sustainable waste management agenda, as shown on the waste hierarchy, recycling is the easiest for people to understand and commit to.¹⁷ By recycling, individuals feel that they are making a direct impact and are part of a positive environmental change.¹⁸

<http://www.parliament.uk/briefingpapers/commons/lib/research/briefings/snbt-01963.pdf>. Therefore 1.9 million tonnes at £32 per tonne = £60.8 million.

¹⁵ Waste Strategy for England 2007

¹⁶ *London's Wasted Resource*, October 2010

<http://www.london.gov.uk/consultation/waste-strategy>

¹⁷ Recyclebank, Transcript of the Environment Committee meeting dated 4 November 2010

¹⁸ Closed Loop Recycling, Transcript of the Environment Committee meeting dated 4 November 2010

3 Types of financial incentive schemes

- 3.1 The Committee focused on two types of financial incentive schemes. The first is based on the concept of rewarding individuals to recycle – the ‘carrot approach’; and the second on compulsion – the ‘stick approach’.

Rewarding to recycle

- 3.2 The concept of rewarding individual efforts to manage waste more sustainably is not new. It has been much researched and trialled over the past decade. More and more, authorities are seeking to use incentives to engage and educate their residents about sustainable waste management.
- 3.3 The Department for the Environment, Food and Rural Affairs (Defra) carried out research in 2004. It found that local authorities were already operating a wide variety of reward-based schemes.¹⁹ But the research also revealed that there had been little systematic evaluation of the costs and benefits of those schemes. Its primary recommendation was to support the commitment made in Defra’s Five Year Strategy (December 2004), to carry out a pilot scheme to bring together a robust evidence base on the effectiveness of different incentive approaches.
- 3.4 It subsequently launched reward-based pilot schemes across the UK in March 2005. Ten London boroughs participated in the scheme.²⁰ The main aim of the pilots was to assess the impact and value for money of financial incentive schemes.
- 3.5 Authorities piloted a variety of schemes. Some were targeted at the community, for example to increase the use of ‘bring banks’ in estates or rewarding the community as a collective, or enabling the community to pass on its reward to a nominated charity or other worthy cause. Some schemes were targeted at individuals, for example, by using prize draws. Given the breadth of schemes trialled

¹⁹ Report to Defra from AEA Technology, *Evaluation of Local Authority Experience of Operating Household Incentive Schemes*, 2005

²⁰ Bromley, Sutton, Hammersmith and Fulham, Lambeth, Haringey, Havering, Islington, Enfield, Hackney and Westminster

and the differing approaches in reporting back on the impact and value aspects of the scheme, the findings proved inconclusive.²¹

- 3.6 Authorities across the UK are now looking to the Recyclebank model as an alternative to schemes previously tried. Recyclebank is a reward and loyalty programme originally set up in the United States in 2004. It aims to inspire individuals to engage in environmentally conscious activities. The programme has expanded quickly and now operates in over 300 communities across 29 states in America. In 2009 Recyclebank ventured into energy savings, setting up partnerships with utility companies in America and rewarding scheme members for reductions in their energy usage. Recyclebank also launched the UK arm of its programme in June 2009. The UK programme serves over 100,000 members.
- 3.7 Recyclebank acts as a loyalty scheme where points are awarded to a rewards account unique to an individual or household. The points are added each time recyclables are set out for collection. Points are based on the weight of the recyclable material put in the bins, and can be redeemed with participating local and national reward partners, or donated to selected schools through the Green Schools Programme.
- 3.8 The Royal Borough of Windsor & Maidenhead (RBWM) is the first authority to trial the scheme in England. The statistics show that the Recyclebank model can significantly improve participation and recycling capture rates.²² The RBWM achieved 90+ per cent participation rates, 83 per cent capture rates for activated households and increases of 40+ per cent in the amount of dry recycled material collected.^{23 24}
- 3.9 The scheme can work well irrespective of area profile and demography. RBWM is an affluent area, while Halton Borough Council, where the second UK trial was launched, is one of the most deprived boroughs in England. Halton participation rates have

²¹ The pilot schemes were launched by Defra, following earlier research. Defra published its findings in 2006 - *Evaluation of the Household Waste Incentives Pilot Scheme*. See

<http://www.defra.gov.uk/environment/waste/localauth/encourage.htm>

²² Initial trials started with green waste in June 2009. The trial was extended in September 2009 to include a range of dry recyclables.

²³ The 83 per cent capture rate is compared with the 65 per cent capture rate for non-activated households

²⁴ Transcript of the Environment Committee meeting dated 4 November 2010

increased 18 per cent and scheme participants recycle on average, 60 per cent more than non-participants.²⁵

- 3.10 The RBWM is firmly committed to its Recyclebank scheme. The borough is convinced that the scheme significantly increases recycling rates and saves money on landfill and taxes. It also claims that participation in the scheme has helped inform residents of the economic value of recycling and stimulate the local economy.²⁶ This link between environmental and economic activity is central to the Recyclebank public relations campaign: it believes that environmental solutions create economic solutions.²⁷ (See the example given in Figure 2 on page 20).
- 3.11 Recyclebank also claims that the scheme can generate sustained behavioural change. Data from the two longest serving clients in the US - Clayton, New Jersey and Upper Dublin, Philadelphia - show that recycling performance is significantly higher than the pre-Recyclebank base line. The data also indicate that this improved level has been maintained since the implementation of the programme.²⁸
- 3.12 During a site visit to the RBWM, members of the Environment Committee were informed by a resident that she had never recycled before but was now “a complete convert” to recycling, with up to three quarters of her waste now going in the recycling bin.²⁹

The compulsory approach

- 3.13 Under a compulsory scheme, households that fail to recycle may be penalised. Under Section 46 of the Environmental Protection Act 1990 (EPA) local authorities can require its residents to place household waste in the type and number of containers it provides. The authority has a duty to ensure that the containers are reasonably adequate and it must give notice that the resident is required to use them.

²⁵ <http://www.runcornandwidnesweeklynews.co.uk/runcorn-widnes-news/runcorn-widnes-local-news/2010/08/26/halton-borough-council-launches-expanded-recyclebank-scheme-55368-27135645/>

²⁶ RBWM written evidence to the Environment Committee

²⁷

http://www.rsaaccreditation.org/index.php?option=com_content&view=article&id=173:recyclebank-best-green-pr-campaign&catid=44:green-awards&Itemid=70

²⁸ Recyclebank written evidence to the Environment Committee

²⁹ The site visit took place on 19 November 2010.

- 3.14 There are two main penalties. It is a summary criminal offence to fail to comply with the authority's requirements, with a fine payable on conviction. However, under Section 47 of the EPA, a resident may be given a fixed penalty notice by an authorised local authority officer and avoid conviction.³⁰
- 3.15 A number of London boroughs have adopted a compulsory approach in their bid to boost recycling rates. The London Borough of Barnet implemented compulsory recycling on a trial basis in 2004 and completed a borough-wide rollout in 2005. Harrow introduced compulsory recycling in 2006. Hackney introduced a pilot scheme in 2006, extending it to the rest of the borough in 2007. Following trials in 2006, Waltham Forest introduced borough-wide compulsory recycling in 2007 – to doorstep properties only. Brent introduced compulsory recycling in 2008. Both Islington and Lambeth introduced compulsory recycling on 4 April 2011.
- 3.16 Boroughs are keen to soften the apparent severity of the scheme. They work with residents through communications and outreach programmes, both before introducing a scheme and afterwards.³¹ The London Borough of Barnet, for example, regularly monitors participation in the compulsory recycling scheme, issuing further information to residents who fail to comply with the terms of the scheme, up to three times, before considering legal action.³² In Hackney, up to three warning letters are issued to residents, following non-compliance with the scheme. Up to three further follow-up visits are made after the warning letters have been issued before considering prosecution.

³⁰ A fixed penalty notice can be issued under Section 47ZA (1) and (2), and 47ZB of the Environmental Protection Act 1990. See <http://www.defra.gov.uk/environment/quality/local/legislation/cnea/documents/fixedpenaltynotices.pdf>

³¹ Final Report of LB Waltham Forest's Compulsory Recycling Scrutiny Panel, February 2007. See paragraphs 33 - 37 and 55. <http://www.walthamforest.gov.uk/comp-recycling.pdf>

³² London Borough of Barnet written evidence to the Committee

Figure 2 - Characteristics of the reward based and compulsory models of financial incentive schemes

RECYCLEBANK	COMPULSORY
<p>Concept Voluntary reward based scheme which aims to change behaviour by appealing to the participants' good nature and community spirit.</p>	<p>Requires voluntary action but tries to achieve it by threat of penalty, ie prosecution and a fixed fine.</p>
<p>Communication Generates increased awareness of recycling through incentive-led messaging. Partnership approach – demonstrates the benefits for the environment, the local authority, the participants and the reward partners Initiates dialogue with the participants that can be maintained and developed through the course of the relationship.</p>	<p>Generates increased awareness of recycling through directive messaging. Adversarial approach – the local authority sets out the required action which the participants must comply with or face penalties. Can discourage dialogue (but dialogue will vary between authorities).</p>
<p>Delivery High start up costs – capital outlay required for new vehicles or vehicle modification to accommodate new technology. Appears to work better with comingled waste collections.</p>	<p>Lower start up costs, though these can vary between authorities, depending on what is already in place. Can work equally well with a comingled or kerbside sort.</p>
<p>Individual impact Easy to demonstrate individual input and practical impact for eg, through support for closed loop recycling – Recyclebank used a Mark & Spencer closed loop example in their advertising campaign to demonstrate how recyclables, such as an M&S milk bottle bought in Windsor can be consumed and recycled by a RBWM resident, collected by a recycling vehicle, RecycleBank points received for recycling, carton processed at Closed Loop recycling (Dagenham) into food grade plastic then re-manufactured by M&S to produce a new milk carton for sale in M&S Windsor and bought by a customer with a RecycleBank reward voucher.</p>	<p>Less easy to demonstrate individual input and the impact one's action might have, (but the messaging can vary between authorities).</p>

4 Evaluating the financial incentive schemes

4.1 There are positive aspects to both reward-based and compulsory recycling schemes. But there are also drawbacks. Using the following four key indicators we evaluate both schemes:

- Impact on recycling rates
- Costs
- Public perception
- Tackling London-specific challenges

Impact on recycling rates

4.2 We discuss the impact the two schemes have on recycling rates in the context of three main aspects. The first aspect relates to issues with the data, the second to the desired outcome, that is, the degree to which the schemes can sustain behavioural change. The third aspect relates to unintended consequences that can come from the schemes and the extent to which they can be managed.

Data issues

4.3 Supporters of reward-based schemes such as Recyclebank argue that they can generate significantly higher returns. The increased level of returns they argue is made possible by a more persuasive approach to communicating about sustainable waste management. By highlighting the environmental and economical benefits of individual action, and emphasising the link between the two, scheme operators can persuade people to change their behaviour.

4.4 Existing data would appear to support the claims. Participation, capture and yield rates in the UK trials at the Royal Borough of Windsor (RBWM) and Halton Borough Council were much improved. Participation rates in the Recyclebank trials in RBWM topped 90 per cent and increased by 18 per cent in Halton. Eighty-five per cent of households that signed up to the RBWM trial went on to activate their accounts and the amount of dry recycled material that was collected went up by forty per cent.

4.5 But data from both the US-based and UK-run schemes are limited. The US data cover a two-year period only, from 2008 to 2010. The data show a plateau in recycling activity, but the Committee heard that this reflects the dip in the economy, causing a decrease in the weight of recyclables collected. Even in these circumstances, the Committee was told, the proportion of materials being recycled is increasing against the overall decline in the total volume of waste

collected. Further data would be needed to evaluate the trend to date. The trials in RBWM and Halton commenced in June 2009 and August 2010, respectively. Again, more detailed analyses over longer periods of time will be needed to evaluate the schemes' true impact on recycling rates.

- 4.6 In addition, modifications to existing UK data are needed. The implementation of both UK-run schemes was supported by intensive communication programmes, and in RBWM changes were made to the service provided. For example, garden waste was initially included in the RBWM pilot scheme and larger wheeled bins, capable of storing twice as much as the existing ones, were provided.³³ However, the data do not distinguish between the impact of the scheme on recycling behaviour, and the impact that either the communication programmes and/or service changes would have had. An RBWM representative told the Committee that it was very difficult to “pin down what the precise impact of the communications strategy was in ...hard numbers.”³⁴
- 4.7 Similarly, data on the compulsory model show that it has a positive impact on recycling performance. Recycling participation and capture rates increase and more recyclable materials are collected. Data from the London Borough of Barnet show that on average, recycling participation rates increased to 85 per cent, and in some areas to 95 per cent. The data also showed that the amount of recyclables collected went up by 28 per cent in the first year of the scheme. At the start of the scheme in 2005, the recycling rate in Barnet was 22 per cent; it now stands at 33 per cent. Harrow also saw an increase in recycling rates from 27 per cent to 46 per cent after introducing compulsory recycling.³⁵
- 4.8 But again, implementation of the compulsory schemes – and there are several in London – was accompanied by changes to the existing waste service or intensive communication campaigns, or both.³⁶ Once again it is not possible to clearly separate out the impact of the different elements.

³³ Wheeled bins with a capacity of 240 litres replaced 56 litre twin boxes previously in use.

³⁴ Transcript of the Environment Committee meeting, 4 November 2010

³⁵ DEFRA statistics <http://www.defra.gov.uk/statistics/files/mwb200910a.xls> See Table 3.

³⁶ London Boroughs of Hackney and Waltham Forest from 2006 and Brent from 2007

Sustaining behavioural change

- 4.9 Any recycling scheme needs to be judged as much by its success in creating sustained behavioural change as in achieving short-term results. As we have seen, recycling schemes encourage behavioural change in two ways. A scheme can offer incentives to individuals to encourage them to continue to participate. Alternatively, an authority can seek to use the law to enforce participation. Whether either approach leads to sustained behavioural change is questionable.
- 4.10 It remains uncertain whether reward-based schemes inherently lead to long-term behavioural change. Representatives from Recyclebank told the Committee that participants may need to be re-incentivised after some time.³⁷ Such evidence casts doubt on their argument that the communications approach facilitates behavioural change based on altruistic motives.³⁸ The data limitations, as discussed above, make it difficult to determine whether the Recyclebank scheme leads to long-term change.
- 4.11 Re-incentivisation may also be needed for compulsory schemes. The London boroughs of Hackney and Waltham Forest introduced compulsory recycling in 2006 when their recycling rates were 16 and 22 per cent respectively (in 2005/06).³⁹ Hackney's recycling rate has improved by eight percentage points, but the increase has been maintained at the same level over the last three years. Waltham Forest's recycling performance improved by six percentage points, but remained at comparable levels over the last four years, except for a two percentage increase during 2007/08.⁴⁰ Brent introduced compulsory recycling in 2007, saw a nine percentage point increase up to 2008/09 but has maintained the recycling rate at around 29 per cent for the last couple of years.⁴¹
- 4.12 The Committee questions whether the focus on re-incentivising individuals to recycle is appropriate. We suggest that it may be more appropriate to communicate with and educate residents continually to

³⁷ Recyclebank; Transcript of Environment Committee dated 4 November 2010

³⁸ The question of motive was highlighted in the London Borough of Hillingdon's written evidence to the Environment Committee

³⁹ See <http://www.mrw.co.uk/home/hackney-introduces-compulsory-recycling/3001666.article> and <http://www.localgov.co.uk/index.cfm?method=news.detail&id=41577>

⁴⁰ Capital waste facts <http://www.capitalwastefacts.com/>

⁴¹ See

[http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/05AE3ABC84CD-EC748025766C0043966E/\\$file/Compulsory+Recycling+in+Brent.pdf](http://www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/05AE3ABC84CD-EC748025766C0043966E/$file/Compulsory+Recycling+in+Brent.pdf)

maintain the interest in managing waste more sustainably. We were told by a representative from Recyclebank that, “you cannot separate the communications that we are doing around the incentive scheme from the incentives themselves.” We were also told that one of the additional benefits of the scheme is that it provides the opportunity for “more fluid communication... with the resident.”⁴²

- 4.13 The uncertainties around the legal process of the compulsory model complicate the situation further. No one has as yet been fined under the compulsory model and the process of prosecution remains untested. There are doubts that the legal framework is sufficiently robust to support enforcement.
- 4.14 Section 46 of the Environmental Protection Act 1990 sets out the legal basis for compulsory recycling schemes. Subsection (1) allows the authority to specify the type and number of containers it is providing for waste collection and to further specify the type of waste to be placed in each of them. Thus the legal premise the authority can draw on is that the materials it nominates for recycling must not be placed in the residual waste bin.⁴³
- 4.15 But enforcing the compulsory approach will be a challenge. The legislation was designed to provide an enforcement tool to deal with side waste, and waste being put out incorrectly or at the wrong time.⁴⁴ It was not designed to enforce compulsory recycling schemes.⁴⁵ So the question remains as to whether an authority can enforce the requirement (not to put certain materials in the residual waste bin) and if so, what precise process it would need to follow to bring about a successful prosecution.

Managing unintended consequences

- 4.16 Whether a reward-based or compulsory model is adopted, waste financial incentive schemes can have unintended outcomes. Boroughs need to consider carefully how they might manage the schemes.

⁴² Transcript of the Environment Committee meeting, 4 November 2010

⁴³ Section 46(4) Environmental Protection Act 1990. In house legal opinion to London Borough of Waltham Forest Compulsory Recycling Scrutiny Panel supports this interpretation of the section.

⁴⁴ Side waste is household refuse presented outside of a standard wheelie bin.

⁴⁵ See guidance issued from the Department for Environment Food and Rural Affairs issued in August 2005

- 4.17 Stakeholders raised two main concerns about a weight-based reward scheme, such as the Recyclebank model trialled in the RBWM and Halton. The first concern is that they may encourage consumerism, in turn producing more waste.⁴⁶ The more a scheme participant recycles, the more reward points they receive. The points are converted to shopping vouchers. It has been suggested that participants may be encouraged to shop more to redeem their vouchers, or that they may buy more goods to generate more waste so that they can boost their points. There are alleged cases where individuals may have deliberately generated more waste to boost their points and maximise their rewards.⁴⁷ However, Recyclebank has stated that there are procedures in place to prevent this type of abuse. If any mixed messages do occur, this could counteract any waste prevention messages local authorities may also be promoting.⁴⁸
- 4.18 The second concern is that the scheme model may be susceptible to increased contamination rates.⁴⁹ In their enthusiasm to increase the number of points collected, people may be tempted to set out items for recycling that cannot be recycled locally; this could be tackled by targeted communications.⁵⁰

Costs

- 4.19 It is clear from the evidence the Committee received that the Recyclebank weight-based scheme is considerably more expensive to implement than the compulsory scheme; it demands high capital and revenue investment. By contrast, far less capital and revenue costs may be involved when setting up a compulsory scheme, depending on what infrastructure is already in place.

⁴⁶ Written evidence to the Environment Committee from Wastewatch, the Chartered Institution of Waste Management, East London Waste Authority.

⁴⁷ East London Waste Authority, written evidence to the Environment Committee: refers to a recycling incentive scheme operated by Tesco. According to anecdotal reports, customers learned that cutting up their waste generated greater rewards. Thus the scheme paid out more rewards than were necessary.

⁴⁸ Wastewatch written evidence to the Environment Committee.

⁴⁹ Written evidence to the Environment Committee from Wastewatch, the Chartered Institution of Waste Management, Hammersmith and Fulham.

⁵⁰ An independent waste composition analysis commissioned by the Royal Borough of Windsor and Maidenhead, following the pilot scheme confirmed that contamination levels had reduced and the quality of the recyclate had increased. For further information see http://www.eastmidlandsiep.gov.uk/uploads/Waste-%20Becky%20/Incentives,%20rewards%20and%20behavioural%20change-20Royal%20Borough%20of%20Windsor%20and%20Maidenhead_1.pdf

- 4.20 The Recyclebank model requires capital investment. New equipment and technology is needed to monitor recycling activity, and to calculate the points to be awarded. New bins, bin lifts, on-board scanning equipment and weigh cells need to be purchased. The RBWM spent £1.2 million replacing wheelie bins and £350,000 on retrofitting their fleet with the lifting and scanning equipment. The retrofit for each vehicle cost £36,000. The RBWM project that the costs for the bins will be amortised over eight years, and over 10 years for the retrofitted equipment.
- 4.21 It should be noted that a rise in prices for recyclable materials is likely to increase the financial viability of the reward-based model.
- 4.22 Revenue investment typically covers publicity and subscription costs. The Committee did not receive any detailed information on publicity costs from RBWM or Recyclebank. But some detail was provided on subscription costs, which are based on one of two models. The RBWM opted for the first of the two models set out below:
- A flat subscription fee levied per household, irrespective of whether the account is activated. This is also subject to a performance-based sliding scale should the percentage of weight collected above a stated threshold be exceeded.
 - A percentage of the landfill diversion savings.
- 4.23 The RBWM has managed to reach a position where the scheme implementation costs have been neutralised when offset against the net increase in the weight of recycling materials. The RBWM target figure was a 25 per cent increase in the weight of recycled materials against an established baseline. The weight increase is currently in excess of 40 per cent.⁵¹
- 4.24 A similar target would be challenging for London boroughs where street-level properties already have high participation rates.⁵² A number of boroughs are already achieving high recycling rates without the use of incentive schemes. Six London boroughs are achieving

⁵¹ Transcript of the Environment Committee, 4 November 2010

⁵² London Borough of Hammersmith & Fulham written evidence to the Environment Committee

recycling rates above the national average rate of 39 per cent; more than half are achieving in excess of 30 per cent.⁵³

4.25 Compulsory schemes, in contrast to reward-based schemes, would appear to delivered at lower costs, if sufficient recycling infrastructure is already in place. The London Borough of Barnet’s communications strategy for implementing compulsory recycling cost approximately 70 pence per household.⁵⁴

Public perception

4.26 There is no obvious public preference for either of the two schemes. The statistics from the UK-based Recyclebank schemes seem to put public support squarely with the reward-based approach. But other research uncovers a more varied response.

4.27 Fifty-three per cent of London households surveyed in 2005 were in favour of compulsory recycling. The research, commissioned by the GLA, surveyed 1,005 London households about their attitudes and behaviour to waste and recycling.⁵⁵ Attitudes to incentives and charging were also explored.

4.28 In-depth analysis of the survey responses showed that support for compulsion is strongest amongst those who are

- already recycling consistently;
- aged between 25 and 54;
- from middle income households;
- using a kerbside collection service; and
- long-term residents in houses.

4.29 Support was weakest amongst older households, black households, those in low-rise flats and social rented accommodation, and households without kerbside collection. Non-recyclers were mostly

⁵³ Defra statistics <http://www.defra.gov.uk/statistics/files/mwb200910a.xls> See Table 3

⁵⁴ Transcript of the Environment Committee, 4 November 2010

⁵⁵ The research was commissioned in partnership with London Waste Action and the Government Office for London.

opposed to compulsion by a large margin, while low recyclers were only just positive.⁵⁶

- 4.30 Anecdotal evidence we received suggests a preference for community-focused schemes. The analysis showed that community-based schemes which rewarded individuals performed relatively poorly. But the performance was much better in schemes which focused on rewarding communities.⁵⁷

Tackling London-specific challenges

- 4.31 To be fully effective in London, reward-based schemes will need to address three main challenges:

- infrastructure complexities, particularly on estates,
- managing communications so that the messaging is tailored and consistent; and
- access and equalities issues.

- 4.32 The first two challenges noted above are also likely to be relevant to compulsory schemes.

Infrastructure challenges

- 4.33 Probably the largest single challenge for boroughs is overcoming the infrastructure challenges presented by flats and estates across London. Boroughs will need to learn how to work with the existing housing limitations; they will have to be able to identify cost effective improvements to help drive up recycling participation and capture rates.
- 4.34 Around half of London's housing stock is made up of flats, a large number of them on estates and in multi-occupancy buildings. Improving recycling rates from flats and estates (currently around 10 per cent) is essential if London is to achieve the recycling and composting target set in the Mayor's draft Municipal Waste Management Strategy.
- 4.35 Boroughs have tried a range of schemes to improve recycling performance in flats and on estates, but have had to withdraw them.

⁵⁶ Information and phrasing taken from the survey report, *Household Waste Behaviour in London 2005*

⁵⁷ Comment from GLA officer, Transcript of the Environment Committee 4 November 2010

The reasons why the schemes failed vary, and include the high costs associated with implementing them, logistical challenges, and low participation. The Mayor's draft strategy identifies a number of common barriers, including lack of space for recycling storage and difficulty in transporting materials to a collection point.⁵⁸

4.36 Financial support from the London Waste and Recycling Board (LWARB) will undoubtedly go some way to meeting the infrastructure challenges. LWARB was established in 2007 to provide a strategic overview on waste management in London. It has put aside £5 million to fund a programme of infrastructure improvements for London's flats and estates.^{59 60} In June 2010, £1.3 million was invested in a first round of funding for flats recycling in 12 boroughs.⁶¹ These included distributing reusable bags to enable residents to easily transport their recycling to communal bins, recycling containers on each floor of blocks of flats and the conversion of waste chutes into recycling chutes, making it easier to recycle from top-floor properties. A second round of funding totalling £3.7 million was awarded in March 2011. Eighteen boroughs benefited from this round of funding.⁶² LWARB has supported 30 London boroughs from the fund, to improve recycling rates in flats and on estates.

4.37 The modified community-based model that Recyclebank operates, called iRecycled, may also provide a way forward. The scheme is based on self-reporting and works by allocating reward points that equate to an equal share of the total amount recycled in the area. Once residents tell Recyclebank they have recycled, the area total is worked out and points are deposited into the Recyclebank account of each participating household.⁶³ The RBWM rolled out a new phase of

⁵⁸ *London's Wasted Resource*, The Mayor's draft Municipal Waste Management Strategy, October 2010

⁵⁹ *London's Wasted Resource*, The Mayor's draft Municipal Waste Management Strategy, October 2010

⁶⁰ Established by the GLA Act 2007, LWARB was set up to promote and encourage the production of less waste, an increase in the proportion of waste that is re-used or recycled and the use of methods of collection, treatment and disposal of waste which are more beneficial to the environment in London. See <http://www.lwarb.gov.uk/> for further information

⁶¹ Havering (in partnership with Barking & Dagenham, Newham, and Redbridge), Waltham Forest, Croydon, Hillingdon, Lambeth, Hammersmith & Fulham, Camden, Westminster and Hackney.

⁶² Tower Hamlets, Lambeth, Brent, Hounslow, Hackney, Richmond, Westminster, Merton, Islington, Lewisham, Wandsworth, Southwark, Ealing, Bromley, Bexley, Enfield, Harrow and Croydon

⁶³ http://www.rbwm.gov.uk/web/wm_recyclebank.htm

its Recyclebank scheme focusing on rewarding communities for recycling, in December 2010. Flats and multi-occupancy properties in the borough are included.

- 4.38 Lambeth is the first London borough to pilot iRecycled, launching the scheme in May 2011.⁶⁴ Both the RBWM and Lambeth schemes should present options for tackling London-specific challenges, particularly the challenge to improve recycling in flats and estates.

Communications

- 4.39 Constant and consistent messaging is essential to the success of an incentive scheme, particularly in flats and on estates. Low participation was one of the reasons why boroughs withdrew incentive schemes in these types of properties. Communication will need to be tailored to reach a diverse and quite often transient population. Boroughs with high levels of transiency may have to invest more resources.

Making the schemes accessible

- 4.40 One stakeholder was concerned about the potential for the Recyclebank model to exclude households which might want to participate in the scheme but do not have online access.⁶⁵ Participants are required to register and receive communication online.⁶⁶ Twenty-six per cent of households in London do not have online access.⁶⁷
- 4.41 The stakeholder also expressed concern that people who move home frequently may also find themselves excluded from the scheme.⁶⁸ Recyclebank has confirmed that when members move home they have up to a year to redeem their points. Recyclebank is also introducing new 'earn opportunities' for other environmental actions. So members living anywhere in the UK and actively participating in the Recyclebank programme in any of the 'earn opportunities' can continue to save and redeem their points at any time, provided of course the schemes are operated locally. This scenario also highlights a potential political issue of borough-wide schemes where some reward residents for recycling and others not.

⁶⁴ The scheme was launched on 16 May 2011 and covers all households with shared recycling arrangements across the borough

⁶⁵ East London Waste Authority written evidence to the Environment Committee

⁶⁶ Recyclebank have confirmed that Members can also participate by phone.

Participants have access to a UK Based call centre to report recycling, order rewards, check account balances and report any issues.

⁶⁷ In Q1 2010, 74 per cent of all London households had internet access, Ofcom

⁶⁸ East London Waste Authority written evidence to the Environment Committee.

5 Concluding comments

- 5.1 Recycling is integral to any programme of sustainable waste management, and to diverting waste from landfill.
- 5.2 Recycling is a concept readily understood by householders. It is relatively straightforward and arguably the most visible way an individual can engage in managing their waste more sustainably. It also provides a tangible expression of responsibility, and of contributing to a better environment at an individual level.
- 5.3 Recycling also provides a platform from which to engage individuals in other methods of sustainable waste management.
- 5.4 The evidence shows that compulsory and reward-based schemes have helped to boost recycling rates. But the schemes were introduced alongside service changes and a detailed communications strategy so it is hard to untangle the impact of the component parts. This limitation in data analyses, along with time restrictions on available data for reward-based schemes makes it difficult to understand the true impact of the schemes on recycling performance and behavioural attitudes. We would wish to see the development of a more comprehensive evidence base over the next few years to help determine the degree to which incentive schemes lead to behavioural change over the long term.
- 5.5 What remains unsubstantiated is the belief that either type of scheme on its own can bring about a long-term change in attitudes and behaviour, towards recycling and/or other sustainable methods of managing waste. The increase in recycling rates following the introduction of the Recyclebank scheme could plateau and further incentivisation may be needed.
- 5.6 The Committee questions whether the focus on re-incentivising individuals to recycle is appropriate. From the evidence we received, we conclude that it may be more appropriate to provide continuous education and communication to residents. This can help with maintaining momentum and individual interest in recycling and other forms of sustainable waste management, the ultimate aim being to minimise waste. In the longer term we would wish to see further investigation into how individuals might be incentivised to reduce the amount of waste they produce.

- 5.7 There are cost and legal limitations to the Recyclebank and compulsory models respectively. Recyclebank involves sizeable capital outlay and considerable revenue costs. The uncertainties of enforcing the compulsory model within existing legislation may to some extent undermine the scheme's validity.
- 5.8 There are London-specific issues that need to be addressed around housing stock, equality of access to the schemes and capturing the large transient population. Looking forward, we would wish to see further investigation into the use of either borough-wide or London-wide reward cards to reward residents for sustainable waste management. This approach could be based on a similar concept to existing schemes such as the Nectar reward scheme or Tesco Club card, allowing residents to benefit from a range of community-based activities, for example, reduced entrance fees to leisure centres.

Appendix 1 Recycling and landfill rates by borough 2010/11

Authority	Authority type	Recycling or Composting	Landfill
Bexley LB	Unitary	50.70	47.34
Royal Borough of Kingston upon Thames	Unitary	46.16	44.74
Harrow LB	Collection	46.09	N/A
Richmond upon Thames LB	Collection	43.01	N/A
Hillingdon LB	Collection	40.90	N/A
Bromley LB	Unitary	40.20	38.07
West London Waste Authority	Disposal	38.10	62.42
Ealing LB	Collection	37.55	N/A
Sutton LB	Unitary	37.51	60.04
Greenwich LB	Unitary	35.42	10.07
City of London	Unitary	35.19	77.35
Havering LB	Collection	34.35	N/A
Merton LB	Unitary	33.62	63.87
Hounslow LB	Collection	33.19	N/A
Barnet LB	Collection	33.07	N/A
Barking and Dagenham LB	Collection	32.75	N/A
Croydon LB	Unitary	32.24	65.78
Redbridge LB	Collection	31.58	N/A
Enfield LB	Collection	31.07	N/A
Royal Borough of Kensington and Chelsea	Collection	30.65	N/A
Camden LB	Collection	29.75	N/A
Islington LB	Collection	29.06	N/A
North London Waste Authority	Disposal	28.85	40.59
East London Waste Authority	Disposal	28.82	44.34
Brent LB	Collection	28.69	N/A
Waltham Forest LB	Collection	27.92	N/A
Hammersmith and Fulham LB	Collection	27.24	N/A
Lambeth LB	Collection	27.15	N/A
Western Riverside Waste Authority	Disposal	26.76	77.75
Tower Hamlets LB	Unitary	26.39	62.78
Haringey LB	Collection	25.12	N/A
Wandsworth LB	Collection	24.99	N/A
Hackney LB	Collection	24.32	N/A
Westminster City Council	Unitary	24.08	16.55
Southwark LB	Unitary	22.13	45.70
Newham LB	Collection	18.80	N/A
Lewisham LB	Unitary	16.85	10.87

Appendix 2 Section 46, Environmental Protection Act 1990

The Environmental Protection Act 1990 defines the fundamental structure and authority for waste management and control of emissions into the environment.

Section 46

46 (1) "the authority may, by notice served on him, require the occupier to place the waste for collection in receptacles of a kind and number specified"

46 (4) "In making requirements as respects receptacles under subsection (1) above the authority may, by notice under that subsection, make provision with respect to –

(d) the substances or articles which may or may not be put into the receptacles or compartments of receptacles of any description and the precautions to be taken where particular substances or articles are put into them"

46 (6) "Any person who fails without reasonable excuse, to comply with any requirements imposed under subsection (1), (3)(c) or (d) or (4) above shall be liable on summary conviction to a fine not exceeding level 3 on the standard scale."

Appendix 3 Key findings

There are positive aspects to both types of schemes. Recycling rates have improved quite dramatically in boroughs where they have been introduced. But there are also drawbacks.

The high costs associated with implementing and running the Recyclebank scheme can be off-putting.

Incentivising to recycle can encourage consumerism, and drive individuals to generate more waste to boost points and maximise their rewards. Awarding shopping vouchers as rewards for recycling can send messages counteracting any waste prevention messages local authorities may also be promoting.

The schemes may be susceptible to increased contamination rates: people could be tempted to set out items for recycling that cannot be recycled locally, either in their in a bid to gain rewards or to avoid financial penalty.

A more comprehensive evidence base needs to be developed to properly determine the impact of incentive schemes over the long term. The Committee is concerned that there is no evidence to support the hypothesis that schemes incentivising people to recycle can change attitudes or behaviour in the long term.

Incentive schemes need to be specifically designed to address London-specific challenges around housing stock, transient populations and equality access issues.

A real emphasis on communications will be needed. Effectively communicating the value of recycling and the need to manage waste sustainably will be key to the success of the schemes. The messaging will need to be consistent, continuous and targeted.

Appendix 4 Orders and translations

How to order

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Chinese

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Vietnamese

Nếu ông (bà) muốn nội dung văn bản này được dịch sang tiếng Việt, xin vui lòng liên hệ với chúng tôi bằng điện thoại, thư hoặc thư điện tử theo địa chỉ ở trên.

Greek

Εάν επιθυμείτε περίληψη αυτού του κειμένου στην γλώσσα σας, παρακαλώ καλέστε τον αριθμό ή επικοινωνήστε μαζί μας στην ανωτέρω ταχυδρομική ή την ηλεκτρονική διεύθυνση.

Turkish

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Punjabi

ਜੇ ਤੁਸੀਂ ਇਸ ਦਸਤਾਵੇਜ਼ ਦਾ ਸੰਖੇਪ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਲੈਣਾ ਚਾਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਇਸ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਉਪਰ ਦਿੱਤੇ ਡਾਕ ਜਾਂ ਈਮੇਲ ਪਤੇ 'ਤੇ ਸਾਨੂੰ ਸੰਪਰਕ ਕਰੋ।

Hindi

यदि आपको इस दस्तावेज का सारांश अपनी भाषा में चाहिए तो उपर दिये हुए नंबर पर फोन करें या उपर दिये गये डाक पते या ई मेल पते पर हम से संपर्क करें।

Bengali

আপনি যদি এই দলিলের একটা সারাংশ নিজের ভাষায় পেতে চান, তাহলে দয়া করে ফো করবেন অথবা উল্লেখিত ডাক ঠিকানায় বা ই-মেইল ঠিকানায় আমাদের সাথে যোগাযোগ করবেন।

Urdu

اگر آپ کو اس دستاویز کا خلاصہ اپنی زبان میں درکار ہو تو، براہ کرم نمبر پر فون کریں یا مذکورہ بالا ڈاک کے پتے یا ای میل پتے پر ہم سے رابطہ کریں۔

Arabic

الحصول على ملخص لهذا المستند بلغتك،
فارجاء الاتصال برقم الهاتف أو الاتصال على
العنوان البريدي الاعدادي أو عنوان البريدي
الالكتروني اعلاه.

Gujarati

જો તમારે આ દસ્તાવેજનો સાર તમારી ભાષામાં જાણીતો હોય તો ઉપર આપેલ નંબર પર ફોન કરો અથવા ઉપર આપેલ ટપાલ અથવા ઇ-મેઇલ સરનામા પર અમારો સંપર્ક કરો.

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Subject: Energy Bill	
Report to: Environment Committee	
Report of: Executive Director of Secretariat	Date: 23 June 2011
This report will be considered in public	

1. Summary

- 1.1 This report sets out action taken in relation to the Energy Bill by the Chair of the Committee under delegated authority.

2. Recommendation

- 2.1 **That the Committee notes the submission in relation to the Energy Bill prior to its Second Reading in the House of Commons, agreed under delegated authority by the Chair, in consultation with party Group Lead Members.**

3. Background

- 3.1 At the Committee's meeting of 6 April 2011, it was agreed that the Chair in consultation with party Group Lead Members would consider making representations regarding the Energy Bill going through Parliament.

4. Issues for Consideration

- 4.1 Following consultation with party Group Leads, the Chair of the Committee, Murad Qureshi AM, agreed the Committee's submission in relation to the Energy Bill prior to its Second Reading in the House of Commons, which is attached as **Appendix 1**. The Committee is asked to note the response.

5. Legal Implications

- 5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

- 6.1 There are no financial implications arising from this report.

List of appendices to this report:

Appendix 1 – Energy Bill: submission from Environment Committee

Local Government (Access to Information) Act 1985

List of Background Papers:

Member's Delegated Authority Form 412

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Energy Bill [HL]
House of Commons – Second Reading
10 May 2011

The London Assembly Environment Committee welcomes the proposed Green Deal, with its mechanisms to enable the retrofitting of energy efficiency and energy generation measures to homes. The Committee has heard that the Green Deal and the Energy Bill currently before Parliament are essential to both national and London carbon reduction targets.

Warm Homes Amendment

However, the government has not said how much carbon is expected to be saved by the Green Deal or set out a plan for where energy savings are expected to come from. Therefore the Committee supports the Warm Homes Amendment, which calls for provisions in the Energy Bill to ensure that an overall plan or strategy is published and kept under review, setting out how the Green Deal and other government energy efficiency measures are expected to contribute to targets on carbon reduction and fuel poverty. As well as integrating the Green Deal with these existing objectives, a published plan with targets and mechanisms would help to give the essential delivery and finance partners confidence in the future of the work.

RE:NEW model

The Mayor and London Councils have put forward their RE:NEW programme as a model for delivery of the Green Deal. This committee supports this model, which promotes uptake of whole-building retrofitting through a single, trusted brand supported by the local authority. This committee also recommends the street-by-street promotion approach used in RE:NEW pilots: the Bill should require Green Deal providers and private landlords to work with local authorities promoting Green Deal measures on an area basis. RE:NEW represents a significant investment in domestic energy efficiency, ready for expansion throughout the capital, which would be undermined if the national Green Deal reverted to a fragmented and piecemeal approach.

This Committee can also support the Mayor's and London Councils' calls for the design of the Green Deal scheme and the legislation behind it to support uptake of all the measures needed to meet the carbon targets. These measures include solid wall insulation, smart meters and renewable and decentralised energy generation. Therefore the Golden Rule (principle that measures should pay for themselves within their lifetime) should be applied at the level of whole-building packages, rather than individual measures. To ensure a whole-building approach, the carbon reduction target should subsidise energy supply and energy efficiency measures including solid wall insulation from its introduction in 2012. Smart meters should be provided to households taking up Green Deal packages.

Building on retrofitting so far and addressing regional disparities

To address gaps in the distribution of insulation under the Carbon Emissions Reduction Target (CERT) so far, the Golden Rule threshold should be set on a regional rather than national basis, and the Committee welcomes the proposed provision for targets in specific areas.

Government and associated data on EPC and previous installations should be collated by government and shared with boroughs for free to enable systematic area retrofitting, and all homes with uninsulated loft and cavity walls should be targeted for a whole-house retrofit.

Private rented and leasehold properties

The private rented sector is a challenging segment of the market, with frequent changes of occupancy and divided responsibility for energy efficiency investments and energy bills. Private landlords should be required to engage with street-by-street promotion of the Green Deal (such as London's RE:NEW initiative) and ensure that these offers are available to their tenants. Leasehold residential properties also present challenges of divided decision-making. The Government should amend section 35 of the Landlord and Tenant Act 1987, to allow for a variation of leases where energy and water efficiency is inadequate, and should ensure that the practical and financial barriers faced by leaseholders are tackled in the secondary legislation.

Murad Qureshi AM

Chair, on behalf of the London Assembly Environment Committee

9 May 2011

Subject: Response to the Mayor's Air Quality Strategy

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 23 June 2011

This report will be considered in public

1. Summary

- 1.1 This report sets out action taken in relation to the Mayor's Air Quality Strategy by the Chair of the Committee under delegated authority.

2. Recommendations

- 2.1 **That the Committee notes the submission in relation to the Mayor's Air Quality Strategy, agreed under delegated authority by the Chair, in consultation with party Group Lead Members.**

3. Background

- 3.1 At the Committee's meeting of 13 January 2011, it was agreed that the Chair in consultation with Party Group Lead Members would consider making comments to the Mayor regarding his final Air Quality Strategy.

4. Issues for Consideration

- 4.1 Following consultation with party Group Leads, and in the light of developments around air quality issues in the interim, the Chair of the Committee, Murad Qureshi AM, agreed the Committee's comments on the Mayor's final Air Quality Strategy, which are attached as **Appendix 1**. The Committee is asked to note the comments.

5. Legal Implications

- 5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

- 6.1 There are no financial implications arising from this report.

List of appendices to this report:

Appendix 1 – Mayor’s Air Quality Strategy: comments from Environment Committee

Local Government (Access to Information) Act 1985
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List of Background Papers:

None

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London Assembly Environment Committee response to the Mayor's final Air Quality Strategy

This short paper outlines the work of the Environment Committee on the Mayor's Air Quality Strategy in the current Mayoral term, welcomes the areas where Committee recommendations have been addressed, and identifies certain areas where recommendations have not been addressed or there are new or outstanding issues. The Committee would welcome a response to this paper and the specific questions it contains.

1. Previous work of the Committee and recommendations addressed

This Committee has contributed to the development of the strategy through the report *Every Breath You Take* in April 2009, a response in October 2009 to the Assembly consultation draft of the strategy, and a further letter in response to the public consultation draft of March 2010.

Several of the Committee's points are therefore embodied in the final strategy, and these are welcomed, as is the whole process of engagement with the Committee's work.

In particular the Committee notes the emphasis in the final strategy on public health. Following the Committee's highlighting of this issue in 2009, the Mayor commissioned research to estimate the mortality attributable to airborne particulate matter across London at the ward level. The London-wide estimate that airborne particulates contribute to around 4300 additional premature deaths each year is now a central finding informing the air quality strategy. The research also found that every reduction in the concentration of these pollutants is likely to lead to a proportionate reduction in these additional premature deaths. This demonstrates the strong public health imperative to meet national/EU targets on air quality and, in the case of particulates, to go beyond the national/EU targets towards the more stringent World Health Organisation targets.

Linked to this was the Committee's emphasis in 2009 on the need for better public information about local air quality. The strategy now includes a policy to improve public communication of air quality information, to enable Londoners to make choices to protect their own health and contribute to improving air quality in their own areas.

The strategy has also now taken forward specific suggestions of the Committee on reducing transport emissions, including upgrading the bus fleet to Euro IV emission standards and pressing the Government to offer grants for retrofitting pollution abatement measures to private vehicles. The Committee's suggestion of one or more extra low emission zones in the most polluted parts of London is once again under consideration – the Mayor must of course give due weight in this consideration to the health of those who live in, work in and visit these areas, in addition to economic and other considerations. Given the urgency of London's air pollution problem, the Committee would like an update on TfL's feasibility work and on the progress made in the discussions with boroughs, and a date by which the final decision will be taken.

The presentation of the strategy document has also improved in successive drafts: as recommended by the Committee, the final version shows the effect over time on pollutant emissions of both the measures included in the strategy and the measures that the strategy says the Government will have to take to meet national and EU targets, and it includes an implementation plan with timescales.

2. Further issues

This section notes some overall issues that remain with London's efforts to improve air quality, and some specific points where the Committee believes that further attention to its recommendations could be helpful.

Particulate matter (PM₁₀)

EU limit values for PM₁₀

PM₁₀ levels have been high in London for some time, and have been reducing as anti-pollution measures have taken effect. The strategy is directed at demonstrating achievement of the EU limit values for PM₁₀ by 2011. Failure to meet these values by 11 June 2011, and/or to satisfy the European Commission with a "revised London action plan to be drawn up by June 2011" could leave the UK liable to fines in the range of hundreds of millions of pounds. However, provisional figures from the monitoring station on Marylebone Road showed that the year's permitted 36 exceedences of the PM₁₀ daily limit have occurred in less than four months. The Committee notes evidence from Kings College London that pollution from continental Europe has contributed to these recent exceedences, and that evidence to the contrary has been provided by the European Commission.

The final strategy also has no reference to margins of tolerance in the period up to 2011, though this Committee recommended they be addressed.

Can the Mayor repeat his reassurance that the measures contained within the Air Quality Strategy are delivering the reductions in pollution necessary to achieve compliance with the limit values in time? Are there any additional measures in the revised London action plan for the European Commission?

There is a proposal in the current Localism Bill to empower the UK Government to pass fines such as this on to other public authorities, including the GLA. The Mayor and Assembly support modifications to the Bill, so that an independent judicial process would judge how any fines should be allocated between Government and local authorities.

We note the evidence from Isabel Dedring at our meeting on 13 January 2011 that the monitoring network needs to be refreshed because some sites do not meet European criteria for inclusion due their positioning. Can the Mayor provide the detail of which sites were referred to as not meeting the criteria for making the case to Europe and why specifically they would be excluded?

Health effects and WHO recommended limit values

However, in addition to the potential fines, it should be noted that particulate pollution contributes to the estimated thousands of extra premature deaths in London each year. The particulate concentration limits recommended by the World Health Organisation are much more stringent than those imposed by the EU, and the Committee in January heard recommendations from Kings College London air quality experts that the WHO limits should be the target for air quality work. A report recently published by the European scientific collaboration APHEKOM found that bringing London's PM_{2.5} concentrations down to the WHO recommended levels would lead to an average increase in life expectancy of 2.5 months for Londoners over 30.

The Mayor and his team should therefore work to continually improve London's air quality to benefit the health of Londoners, even after the national/EU targets are met.

Taxi emissions

We note that the expected reduction in PM₁₀ emissions from taxi exhausts by 2015 is 50 per cent in the final version of the strategy, whereas it had been 60 per cent in the public consultation draft. Can the Mayor provide the Committee with details of this modelling, demonstrating how this discrepancy can be accounted for?

Nitrogen dioxide (NO₂)

The strategy is directed at demonstrating achievement of the EU limit values for NO₂ by 2015, again to avoid EU fines. However, it states that the Mayoral actions it contains will be far from sufficient to meet the limits. It calls on the Government to implement a specific programme of measures to support compliance. The GLA will contribute information for a national action plan to be submitted to the EC in support of the application to extend the limit value deadline to 2015. The Committee would like a progress report and an estimated implementation timescale for the national actions.

The Committee also believes that action to tackle NO_x pollution is essential, and joins the Mayor in calling on the Government to devise, resource and implement an effective national action plan, in collaboration with regional and local partners such as the GLA. In taking resourcing decisions, the Government should consider its own estimate that the costs of air pollution in the UK are equivalent to between £9 billion and £19 billion per year, and that both pollution and people's exposure to it are concentrated in large cities, especially London.

The Committee also wishes to see the Mayor review his own Air Quality Strategy after the publication of the national action plan, and if necessary to build upon London-specific measures to be sure that the EU limit values for NO₂ are met in London.

The Committee looks forward to the Mayor's response to the questions and issues raised in this paper.

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Subject: Environment Committee Work Programme 2011/12

Report to: Environment Committee

Report of: Executive Director of Secretariat

Date: 23 June 2011

This report will be considered in public

1. Summary

- 1.1 The purpose of this report is to propose areas of work to be covered by the Committee in 2011/12, with a schedule of meetings. This paper identifies priority topics for consideration and possible areas for follow up work on previous Committee reviews and briefings. The Committee notes its work programme and agrees any changes at each meeting.

2. Recommendation

- 2.1 **That the Committee notes its work programme for 2011/12, as outlined in paragraphs 4.1 to 4.9 of this report.**

3. Background

- 3.1 This report sets out a proposed programme of work to be covered by the Committee during 2011/12, including priority topics for consideration. As 2011/12 will be the final year of the Mayor's four-year administration, it is proposed that the Committee could use some of its meetings later in the year to consider progress with Mayoral strategies and discuss the Mayor's environmental achievements.

4. Issues for Consideration

2011/12 topics for investigation – proposed priority areas of work

- 4.1 **London's energy gap** – the issue of London's energy gap was the main item for the 19 May 2011 meeting of the Committee, including a briefing on the London Array and a broader discussion around London's 'energy gap', development of the green economy and ways of developing skills and employment benefits.
- 4.2 **The Olympic Park environmental legacy** – as the final instalment of the Committee's work on the Mayor's commitment to organise a sustainable Games the Committee will assess the prospective environmental legacy of the Olympic Park at its meeting on 23 June 2011.

- 4.3 **Electric vehicles** - the Mayor has a commitment to make London the electric vehicle capital of the world. There would be benefits to London's air quality, but plans for expanding the charging network have been scaled back. The Committee would look at what the Mayor has done to promote this objective and what the future of electric vehicles in London may be. A report on the scope and terms of reference of this review is included on the agenda for 23 June meeting of the Committee.
- 4.4 **London City Airport** – a review into the monitoring processes put in place by the airport to assess the impact the increase in flights is having on air quality, noise and climate change, and what action it is taking to mitigate any identified effects. This item has been postponed from 2010/11 to allow for the judicial review process to be finalized. The September meeting may be able to hear from the airport and from Newham Council.
- 4.5 **Royal Parks** – the Committee will discuss with the Royal Parks Agency the challenges facing the Royal Parks, the role they play in London's environment and how the new governance arrangements will work.
- 4.6 **Noise and air pollution at Heathrow airport** – the Committee's review will build on the Committee's previous work on Heathrow airport, looking at the latest environmental data and BAA's mitigation measures.
- 4.7 **Management of Vegetation on railway embankments** – a proposal for a rapporteurship on the management of vegetation on railway embankments is included on the agenda for the 23 June meeting.
- 4.8 **Drought** - following the long period of dry weather affecting London and the South East, the Committee will keep under review the issue of drought and if necessary invite Thames Water to a meeting.
- 4.9 The schedule of meetings in 2011/12 is set out below:

Date of Committee	Main business
19 May 2011	London's Energy Gap
23 June 2011	Olympic Park environmental legacy
12 July 2011	Electric vehicles
8 September 2011	Noise and air pollution at Heathrow Airport
20 October 2011	Royal Parks
10 November 2011	London City Airport
12 January 2012	Progress with Mayoral Strategies
2 February 2012	Stakeholders to discuss Mayoral achievements
1 March 2012	Mayor's Environment Advisor

5. Legal Implications

5.1 The Committee has the power to do what is recommended in the report.

6. Financial Implications

6.1 There are no financial implications arising from this report.

List of appendices to this report:

None

Local Government (Access to Information) Act 1985
List of Background Papers: None
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