

Environment Committee – 26 March 2014

Transcript of Item 6: Mayoral Carbon Reduction Targets

Murad Qureshi AM (Chair): We now return to our main item of business, carbon targets and energy generation in London. We have in front of us Matthew Pencharz, the Senior Mayoral Advisor on Environment and Energy. Along with him we have Andrew Richmond and Peter North representing the Greater London Authority (GLA). We have Afsheen Kabir Rashid, who is the Co-Founder of Repowering London and Chair of Brixton Energy; Reg Platt, the Senior Research Fellow from the Institute for Public Policy Research (IPPR) and finally Don Leiper, Director of New Business at E.ON Energy. Thank you all for making time for us this morning to be scrutinised by the questioning on this topic.

Can I begin the questioning by noting that last night we received a copy of the Mayor's updated Energy Policy? If nothing else, I think one thing that the Committee does is make sure that the Mayor gets these things out in some sort of time and order. As a result, can I ask Matthew directly what progress has been made towards achieving the Mayor's 25% target for decentralised energy provision by 2025?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Thank you, Chair. As you said, we have a policy target to meet 25% of London's building energy demand by 2025 from local generation and that will be mainly through heat networks. The drive for that is to deliver lower cost, more secure and also lower carbon energy supply. No one here is going to pretend that that is not a challenging target, but the Decentralised Energy Project Delivery Unit (DEPDU), who is Peter North and a few colleagues, has already brought to market projects to the value of almost £33 million. The project pipeline has a number of projects with a very high probability of delivery, which could meet 8% of London's demand. The wider pipeline, 22 projects with a value of £240 million would supply 20%. You can see there is a pipeline of projects and we are on our way to delivering the 25% target.

In the last year, very excitingly, we have had a number of firsts for London. I talked about South East London Combined Heat and Power (SELCHP) last time I was before you. Back in November they launched the heat network, admittedly 20 years after the incinerator was commissioned, but better late than never. It is fantastic that 2,500 homes in Southwark, people generally more at risk of fuel poverty, will now be receiving cheaper heat in the near future. Peter told me the other day that they are bringing all the kit up to temperature and that should be delivered quite soon.

Also there is the Bunhill development in Clerkenwell in Islington where 850 homes are already plugged into the heat network there, delivering a 10% bill saving for some nearby estates in the Bunhill ward. Now of course phase two is beginning construction, which is going to plug into a nearby Tube vent, on the Northern line on City Road and a UK Power Networks (UKPN) substation, and using some heat pumps will raise the temperature of that low-grade waste heat

to help heat a further 500 homes with even lower carbon and also, perhaps more importantly, lower cost heat for local residents.

We are pulling all the levers we can to de-risk the investment and overcome the barriers so that people step up and invest in heat networks. We have the DEPDU team which is doing heat mapping, working out these strategic places where heat networks has the right development nearby of mixed use of both residential and office work or light industrial, so we have the heat load being used efficiently during the day.

We have been using the planning system, which between 2010 and 2012 delivered 74 megawatt of combined heat and power (CHP) electrical capacity. That is enough to power 150,000 homes. In fact, in 2011 we were 33% above the 2010 Carbon Building Standards and in 2012 36% and our target was 25%, so through the planning system we really are delivering the CHP as we had hoped.

Licence Lite, I think the Committee has been following the Licence Lite Project and we had the application into the Office of Gas and Electricity Markets (Ofgem) for applying for a junior electricity licence so that smaller electricity generators can sell their electricity at a better rate, 20% - 30% better, we think, is our current business projections. We have just gone out to The Official Journal of the European Union (OJEU) for the market services we would need to run that system, to effectively run the wire. I know we already have at least two companies that have expressed verbal interest and we hope to get more when that goes out to tender.

We have already made comments about using the Tube, which is obviously London's largest energy consumer, to help stimulate some of these projects as a body who could buy that excess electrical capacity through the Licence Lite system when we have it up and running.

In the medium to longer term, coming off the Mayor's 2020 Vision, the Mayor's Infrastructure Investment plan as part of that will be co-ordinating a spatial energy masterplan for London, looking into the longer term about how we can deliver our positive objectives in looking beyond 2025 and see what further penetration heat networks could have in London.

We will also look into DEPDU 2 and how we could have a sustainable body here in City Hall to continue Peter's fantastic work at delivering these projects and bringing them to market, Sherpaing them, engaging with the different stakeholders, developers, and often the planning authorities, so we get these large-scale heat networks off the ground, through planning and actually in delivery.

It is an absolute priority of the Mayor to deliver a lower cost, more secure and lower carbon energy supply for London and we are certainly pulling all the levers we can to deliver that. We think we made a fairly good start on moving towards first that policy target and then looking further into the future.

Murad Qureshi AM (Chair): Thank you, Matthew, for that. The areas you have just covered in your response, like transport missions and the Licence Lite, will be specifically dealt with. Can

I just come back to you, to the initial question? Do you expect still to hit your 2015 decentralised energy targets?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): 2025 you mean?

Murad Qureshi AM (Chair): 2015 actually, the interim target. We are talking about the 2015 decentralised energy target, that is 1,892 gigawatts from decentralised energy plus 552 gigawatts per hour from micro-generation.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): I think that is a policy question but I think we will fall short of that target. The rate at which we are bringing projects to market in the early stages is very slow by the nature of the time it takes to develop, bring together commercially structured projects. I think the pipeline is a good indication of the potential, but I do not think it matches closely the 2015 timescales.

Murad Qureshi AM (Chair): It is safe to say we are behind progress then?

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): I would say yes, we are.

Murad Qureshi AM (Chair): For the Assembly Members there is a list of the projects in appendix 2. You may want to go into specifics later, I just think it is worth noting.

There is just the one you mentioned, Matthew, SELCHP, if anyone is wondering what that stands for it is --

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): South East London Combined Heat and Power, which is the big residual waste incinerator we can all see from the top of this building - in fact we see less frequently because of the One Tower Bridge development. It was commissioned in 1994. It had the kit already to be a combined heat and power plant but only very recently has Veolia and the borough, and with some help from DEPDU, have we connected in the CHP ability of that incinerator. It is quite an exciting step. It is the first time it has happened here in London. If all four of our large-scale incinerators here in London had heat networks we could actually heat and power 260,000 homes from low carbon energy, which is possibly something we would like to do. We are working very closely, for example, with the Edmonton incinerator and the Lee Valley for a similar project off that as well.

Murad Qureshi AM (Chair): What is the Mayor going to do to make sure that similar projects do not fall foul of such huge delays before there is take-up of the CHP? As you were saying, it only came into operation in late 2013 when it had been built ready in 1994.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I think 1994 was before the GLA or the current Mayor, so that was the planning regulations as was then. I think it is not fair to point the finger at the current Mayor or the previous Mayor about why SELCHP has only now become a proper combined heat power.

Looking, for example, at the Sutton incinerator that is currently going through planning, as part of the planning consent they have to get ready to be plugged into a heat network. It is quite clear that we are going to get heat customers from that plant, so it will meet the carbon intensity floor as part of the planning process. We are working very hard and Peter is quite engaged in ensuring that when that is constructed it will have heat customers and will become a CHP plant from when it starts, rather than having to wait the 20 years that we had with SELCHP.

Murad Qureshi AM (Chair): I am not particularly picking at the Mayor, but there is an issue, as we touched on earlier, about environmental enforcement, particularly in the planning system and making sure the commitments developers have given are delivered within a decent time framework so that people can make the use of the waste incineration facilities. That has clearly been one of the things lacking locally in Lewisham on the SELCHP development.

Can I just go back, the recent statistics indicate that the capacity for CHP had increased and its actual generation has also increased. The new capacity seems to be underused, like I have just suggested with SELCHP. That has come from Department of Energy and Climate Change (DECC). That is in comparison with things nationally as well. It really does need to be dealt with. I just want to be convinced that you are on top of this and making sure we do not have these further delays.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): We recognise that people build facilities and they are not necessarily used to their full capacity, so we have our programme of energy master planning and we have provided a £10,000 contribution towards a borough carrying out a masterplan for a prescribed area, which might be an opportunity area or the borough itself. We have probably jointly commissioned about eight or nine of these to date and the purpose of the masterplan is to determine the extent of a market-competitive area-wide heat network. It creates a vision of what is possible, the economics of it, it helps inform planning policy and some of the core documents such as area action plans, etc.

From that masterplan it also establishes how that network will be developed in small phases. Good examples of these are the work we have done in the upper Lee Valley around the Edmonton Energy from Waste Plant where that now has progressed to a business plan. It has taken about four years to get to that point. The energy from waste plants that Matthew referred to, we are now engaged with the Bexley Plant at Belvedere and Lakeside just outside London in planning for heat offtake. Without this planning facility you cannot envisage the strategic opportunity but we are closely engaged with boroughs in realising that.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Peter is leading a team which is helping to overcome, more than anything it is cultural barriers and barriers to do with our own planning system. On some of these projects you are likely to have multiple boroughs, multiple stakeholders and multiple developers. In this country so far there has not been a big culture of these heat networks. The Nordic countries have been doing it for generations, largely driven in Denmark, for example, by the oil shock of the early 1970s, and in Finland when they became very rapidly urbanised post-war. We have not had a culture of this in

this country because frankly we had cheap coal until the 1980s and then cheap oil and gas until very recently, and there has not been this culture of energy efficiency that we really need to grab in this country. I think that what Peter's team is doing and what the Mayor is trying to do through the planning system is to overcome these barriers so we can get more of this culture. The way we think to deliver a lower carbon, cheaper and more secure energy supply for London is through these heat networks but we need to overcome these barriers and this is what Peter's team is up to.

Murad Qureshi AM (Chair): I would have thought the recent concerns about energy security with events in other parts of Europe would heighten that emphasis.

I just want to go back to the figures themselves. Peter, it is quite astonishing that if you look at DECC figures we have gone from 147 CHP schemes in 2010 to 255 in 2012 and that seems like good progress. In terms of increased electricity capacity we have only gone from 124 megawatts to 153 megawatts from 2010 to 2012 and that is what the questioning is really pointing out. If you compare that with the rest of the country we are actually not doing terribly well.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): I think a lot of the small increase in the early days it was post-privatisation of the electricity industry, there were large industrial CHP plants going in on industrial sites, gas turbine based. The changes in the electricity market and the new electricity trading arrangements brought so much risk into how these larger plants operated that you saw a complete depletion of these large schemes. What has proliferated since then are small building-specific schemes, the type that the London Plan encourages, the installation of small gas engines, and E.ON are one of the leading lights in this area.

You would get a proliferation of small schemes with a smaller amount of electrical generation. You should not forget the heat production figures that these bring about. The work that I am involved with, through the master planning, is looking at the much larger-scale schemes. We are not so much driven by electricity-generating capacity, we are driven really by the thermal capacity systems and the carbon savings that they generate. So SELCHP, for example, 40 megawatts electrical, it exists but they have now introduced the heat network which is driving out the use of fossil fuels in building heating and that is a good example of the work that has been going on in London to develop the full heat supply capacity.

I do not feel looking at electrical figures is a good measure of what the potential is and what can be achieved. It is trying to get all the energy out of these plants, including the waste heat and get that into the decarbonising buildings.

Murad Qureshi AM (Chair): Reg, from the IPPR, comparatively I have just mentioned the DECC figures, how is London performing in comparison to the rest of the country as well as mainland Europe?

Reg Platt (Senior Research Fellow, IPPR): I would say it is absolutely right that we should have a focus on heating requirements in the UK, that is where the majority of our energy usage

comes from, but there are clearly massive opportunities for decentralised energy on the electricity side. For London to trying to achieve its decentralised energy targets there are big opportunities here which I think could be made much more of.

Looking at the figures for the small-scale feed in tariff, the numbers of installations that there are for renewable electricity is very, very small compared to basically all other regions of the country. One of the most exciting technologies we have here, one which is very suitable for London is obviously solar photovoltaics (PV). We have got a huge amount of roof space in London so there is a lot of opportunity for installation of this technology. In terms of what has actually been installed, London appears to be behind all other regions of the country, across the whole of the UK, which includes further north where you expect there is going to be less sun. We should be in a sunny region here so it is something we can make more opportunity of.

We have a briefing coming out shortly which is looking at Los Angeles and making some comparisons to what is happening in London in terms of renewable energy deployment. The key issue seems to be medium-scale solar installations. It is something Greg Barker MP [Minister of State for Energy and Climate Change] is aware of in DECC as well. 75% of this, admittedly very small, number of installations of solar in London are around about 3.8 kilowatts in size. If you go to Los Angeles where they are doing far, far more within the city on renewable electricity, 80% of their installations are above 3 megawatts, so far, far bigger. It means using commercial roof space, it means using factory roof space, all those kinds of things.

There is a discussion there to be had between DECC and the city authority in London saying, "How can the national policy work alongside the city's ambitions on renewable energy to make sure that these installations are occurring across all this roof space that exists?"

Murad Qureshi AM (Chair): Thank you for the comparisons but is Los Angeles the appropriate one? If it is California, probably San Francisco is the nearest to our climate. Are there any cities in Europe which are useful to compare us against? For example, the leading city in Europe is clearly Copenhagen, but it is not a world city like us.

Reg Platt (Senior Research Fellow, IPPR): I do not have figures to hand on the rate of deployment that you have got on different technologies. Obviously you can look to Germany where there is huge expansion of renewables and you will see, something that we will come onto in the discussion later, very different models of communities, local actors, other types of bodies engaging with the energy market to make renewable energy on an absolutely massive scale. The German situation is two-edged, I think, because you are seeing massive uptake in renewables at the same time as you are seeing a lot of costs incurred by that, but there are lessons to be learnt there about engaging people in the process of the Government's ambitions in decentralised energy.

Jenny Jones AM: You are talking about the stuff I wanted to ask about. Here in London the uptake of PV is something like 34,000 households - that is the number that is signed up to the feed-in tariff, out of a total of 3 million households, so London is lagging behind quite substantially. We have heard from the Mayor's advisers that they are pulling all the levers they can. It sounds as if they are not pulling all the levers they can.

Reg Platt (Senior Research Fellow, IPPR): It is notable, I suppose that the focus is on the opportunities around CHP, which are incredibly important but here I think we have one of the most exciting technologies available in terms of the move to clean energy, costs are coming down radically. There is all this opportunity in terms of roof space, so steps that can be taken to try to make more of the solar opportunity in London, I think that should be something that is thought about. Whether that requires some kind of dedicated strategy for solar in London, as I say, there is a particular issue to be thought about which DECC is aware of about these medium-scale installations which would really unlock a lot of capacity. Maybe that is somewhere to focus.

Stephen Knight AM (Deputy Chair): I had a question around CHP, and clearly there is an ambition in the Mayor's strategy to see a much bigger uptake of CHP. I wondered, are there other air quality implications if we see a large increase in particularly small-scale CHP facilities burning more gas locally, or biomass for that matter?

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA):

Decentralised energy is local electricity production and recovery of the waste heat where it is appropriate. Heat networks have a role to enable that. In our work we are a bit technology agnostic. A lot of our work focuses on bringing about the heat network arrangement and how the energy is produced that feeds into that is on a site-specific basis.

Looking at gas engines, CHP is energy from waste, it could be a whole range of industrial processes, but I think what you are probably referring to is the small gas engine type arrangement. By decentralising we are displacing electricity from centralised power stations and, therefore, naturally we are bringing that generation into London, it does give rise to more primary energy consumption and, therefore, the emissions related to that.

What we envisage is that there will be an increase in emissions because of the greater population of the small gas engines. We think that will probably be a short to medium-term characteristic because I think as we begin to decarbonise our energy generation nationally the energy production technology will move from gas engines to something else. It might consolidate to larger plants, industrial heat pumps, etc. There will be a short to medium-term emissions impact but these plants must address the local air quality issues so we would expect these plants to actually carry out surveys around air quality and carry out the emissions impact assessment. They can be equipped with abatement for nitrogen oxide (NOx) through selected catalytic reduction.

Stephen Knight AM (Deputy Chair): Do they have to be fitted with that? You said they can be.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): What we have done on a couple of projects on the Euston Road and others is we have carried out the Air Quality Impact Assessment and we found that without the abatement technology the dispersion concentrations actually breach the local limits. These then can be brought back into the

standards by the addition of abatement. Some of the disadvantages is it puts the capital cost up a bit and there is also a running cost associated with that. It stresses the CHP plant.

Stephen Knight AM (Deputy Chair): You said that clearly you think there will be a short to medium-term increase in emissions, obviously a particular worry in terms of NO_x in the case of London. Have you modelled the scale of that, given your ambition for the increase in the use of CHP plants across London?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I think it is worth pointing out that we have an air quality neutral policy in the London Plan and if you are putting a network like this in you are also displacing a large number of small individual boilers that would otherwise go in there. It is worth considering, when you think about the population increase and the necessary need for development here in London, which needs some kind of powering, clearly having one larger gas engine rather than a multitude of smaller boilers, which as we all know pump out NO_x, is worth considering as part of the air quality neutral policy that we have specifically in the London Plan. Things are not going to go through planning unless they have the air quality impacts calculated that Peter has referred to.

Stephen Knight AM (Deputy Chair): We seem to be getting a slightly different view. I have just been told by Peter that there will be a short to medium-term increase in emissions associated with increased CHP use in London. You are saying that there will be a neutral effect and I have also heard that in a particular location it was discovered that the new plant had pushed emissions above legal limits and, therefore, mitigation measures had to be taken. There clearly is an issue. What we are talking about I guess is generating more electricity locally, potentially by burning gas or other biofuels locally and that presumably means that the emissions associated with that will be local in London, in an area where we already have high levels of NO_x, rather than further away. These are very pertinent issues about the trade-off between the benefits and costs of CHP in an urban environment setting. I want to know whether this has been properly modelled and understood by those who are driving these policies.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): There is a trade-off but London is growing extremely quickly so we need to develop new homes, new businesses and new jobs. These places have to be powered by something, so they could be powered by individual boilers, clearly, in the shorter term, which have more NO_x impact than one or two larger gas engines.

You are absolutely right to point out that as London is developing, I do not know if you are suggesting we should not develop and should just allow house prices to continue shooting through the roof --

Jenny Jones AM: That is out of order.

Stephen Knight AM (Deputy Chair): That is not what I am asking about, is it, Matthew? I am talking about a switch from drawing energy off the grid - where yes there are emissions associated with that but the power stations that London relies on are not generating the local

air quality issues in the centre of London – to instead generating electricity locally, which has all sorts of good carbon reduction benefits, but it also has the disadvantages that you are burning the fuel in London in an area where you already have extremely high levels of air pollution, where the concentrations are above legal limits. It is that trade-off. It is not the case of you are going to need to power them in some way. Most of London's electricity gets drawn from remote power stations where the emissions are not concentrated in the centre of London. That is the issue. If we are shifting the emissions output to being locally emitted, rather than more distantly emitted, then that is going to add to the concentrations in central London. I want to know whether the people driving this policy understand and have modelled the impact of this in terms of air quality.

Andrew Richmond (Policy and Programmes Officer, GLA): If I can just point out a piece of work that we have got timetabled in for this year is looking at new generations of boilers and systems, and checking alongside our air quality policies to ensure that wherever we are going or whatever is being proposed we have some up-to-date research on the impacts of CHP, particularly around small communal boilers and air quality implications. That is a piece of work that we have got timetabled in for this coming year.

Stephen Knight AM (Deputy Chair): The point I wanted to make are these are heat-led projects, they are not electric.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): These are heat-led projects. They are not electrically-led projects. In order for CHP to be market competitive you need heat customers in order for it to work and that heat is going to have to come from something originally. The point I was trying to make is that you are going to have a multitude of gas boilers, or you could have a heat network which is going to provide, as I said earlier, the cheaper heat, the more secure heat and the lower carbon heat.

Stephen Knight AM (Deputy Chair): Is it your assertion, Matthew, that we are not talking about burning any more gas than we would otherwise be simply for heating? Because if that is your assertion it contradicts what we have just heard from Peter, which is there will be an impact of increased air pollution emissions in the short to medium-term.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): Because you are actually producing more energy locally by way of electricity production and obviously the heat, there is a net increase in primary energy consumption at that point, but it is at that point where the facility is being built. There would be mitigation that the alternative of myriad of small boilers is no longer required. From an air quality point of view we are interested in the contribution of that point source. If it is already within an area where they are in breach of air quality standards the CHP would not be permitted to be constructed. It must not contribute towards breaching standards and, therefore, the next level we look at are the abatement systems that we can deploy. Provided the air quality modelling demonstrates we are not breaching air quality then the project will proceed, otherwise it potentially would not get permitted.

Stephen Knight AM (Deputy Chair): Chair, I think we probably need to move on now. It is clear to me that nobody has a handle on the overall impact of this, in terms of air quality. We have a policy that no one actually has modelled the impact of that policy, if we do roll out a large number of new CHP facilities in London, and that needs to be done.

Murad Qureshi AM (Chair): That can be pursued by the Committee. We have noted the responses, Stephen, and thank you for bringing up that issue connection with new heat generation.

Jenny Jones AM: We have heard, Peter, that you are going to be behind the 2015 targets. Could you quantify that for us? How far behind are you going to be? If you cannot do it now could you let us know as the Committee?

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): I would have to analyse the figures, because that is only next year and I am looking much further in, so I would have to return back to you, I am sorry.

Jenny Jones AM: Obviously it is important to improve things as quickly as possible and it is not good enough to leave it all until 2020. You are actually leaving it to a different Mayor potentially.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): I would have to come back to you with those figures.

Murad Qureshi AM (Chair): Peter, we will look forward to correspondence from you on that point that Jenny has raised.

Just to wrap up on this end, can I just come to the more localised efforts that we are talking about, the feed-in tariff, for example. In 2010 it had real scope for ordinary Londoners to provide some of their own electricity, certainly with solar panels. Afsheen, can you explain to us what the experience of ordinary Londoners trying to get initiatives like that off the ground has been? Does that explain, for example, why we are so far behind in comparison to other regions in the UK?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): With our experience on the first community owned renewable energy projects in London, which was in Brixton, the first project took us a year to get off the ground. That is largely led by volunteer time, people putting in, understanding what is required, understanding how you get permission, unlock assets like the roofs that you were talking about, who you engage with. Then after you have got all of that, understanding how you can market, do the feasibility, develop a financial model and raise the funds for the capital. There is quite a lot involved. The first project now has been installed for two years and we have got our annual general meeting this Saturday. There is still quite a lot of work involved in keeping the system going, claiming the feed-in tariff and engaging with your energy providers to get your income in. There are lots of issues around even installing an export meter to claim your export tariff. I took us six months to go from understanding who we had to sign a contract with, getting

agreements from the person who pays the bill, to getting what is called a meter operating contract (MOC).

There are so many different elements involved for communities to understand and unpick. There are many barriers along the way but fortunately we have been in a position to have done it three times so we have the experience and skills now, and we are supporting other community groups to do the same. We still need to broker relationships with the people who are holding those assets, the roofs. In most cases in London the local authorities are major housing providers and they have lots of assets in hand, and the question is how do we broker that relationship with community groups so that we can unlock the asset that exists and be able to scale up projects to look at more medium-size installations. At the moment you are looking at really small-scale installations. How can you achieve that scale? Community groups really need a lot of support in terms of taking that and scaling and driving forward. I think they have a massive potential.

As part of their Community Energy Strategy, Peter Capener [Bath and West Community Energy] had done a piece on community renewable electricity generation. As a nation there is a 3 gigawatt potential, whereas obviously London's contribution is really, really small. You were talking about the figures, it is 43 megawatts of total installed capacity. There is such a massive potential for us to unlock here and we can use community groups to help raise the finance and get the buy-in, get local people involved in unlocking this potential.

I find at the moment where we are talking to local authorities the barrier is local authorities have more capital rather than revenue, whereas community groups need a lot of revenue to help develop the projects and invest in it upfront. Whereas community groups can raise the funds for the capital themselves, so how can we help local authorities unlock their capital to push forward such initiatives, and that is an area to look into.

Murad Qureshi AM (Chair): Just to confirm, yes, the level of PV capacity in London stands at 43 megawatts, at that is one-tenth of the capacity added in the south west and lower than that installed in the north east of Scotland. A lot needs to be done. Quite honestly the only example I know of is Brixton Energy. How many others are there?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): We have done three schemes and they are the only community-owned schemes in London. I am sure there are other schemes where schools have secured grant funding to install solar panels or they have used their own capital to install solar panels. There are Rent-A-Roof schemes which local authorities have taken on. In terms of community ownership it is pretty much the Brixton Energy scheme that is 132 kilowatts so far. We have several projects in the pipeline at the moment.

Murad Qureshi AM (Chair): When we are talking about 'community' we are talking about groups of tenants, schools and hospitals even.

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): Local people investing in co-operatives that install solar panels on social housing blocks, communities or churches.

Murad Qureshi AM (Chair): What do you think the Mayor can do to make the most of that opportunity?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): I think there are several things. The Mayor has a vision for London, whereas how is that then being transferred down for local authorities to invest and prioritise this specific area? Local authorities at the moment with their budget cuts are seeing really small teams working on energy efficiency, energy generation and there is a lack of expertise at the moment within local authorities and they are struggling. There are some that are doing really well like Islington and Camden, whereas there are others who need more support. Given that there is a dwindling budget for local authorities we can unlock a lot of the potential and expertise that exists within the community groups. I suppose we would look at direction or projects that the GLA can support to help broker those relationships rally to unlock that scale.

Murad Qureshi AM (Chair): OK, thanks for that. We will come back to that because I think that is an important way in.

Just a final question on decentralised energy. Just talking about the existing decentralised energy, what is currently the percentage coming from renewable sources? Peter, we talked about the knock-on effects on air quality. Most of it, as far as I am aware, is coming from mainly gas for heating. I just want to know how much of it is from renewable sources.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): I am sorry, that is a big question for me to answer here because we have to break it down into the technology types, the PVs and the micro-wind, etc, because it is quite all encompassing and as you begin to see SELCHP come on stream, a theoretical 60% of SELCHP's waste input is classified as renewable as well. I do not have the figures immediately to hand.

Murad Qureshi AM (Chair): As a rough rule of thumb how much is renewable?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): In the brief I have been given in 2012 it is estimated it was 2.5% of London's electricity is from renewable sources, and that is a doubling since 2008. Admittedly it is relatively low, it was half of that six years ago.

Murad Qureshi AM (Chair): OK. It is just useful obviously for the record. Progress we are not making on that front. That is something I am sure Jenny and Navin want to pursue now.

Navin Shah AM: Chair, in appendix 2 there is a list of decentralised energy projects, my query is specific to Kilburn Project. I understand that there seems to be some delay due to the procurement process. The question is: is this project grossly behind the timeframe, because all other projects are operational, completed? There is one under construction, so I would like to

have a clear update on what the situation is, why it has been delayed and what is the completion timeframe now?

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): I do not have the paper. This is South Kilburn in the London Borough of Brent?

Navin Shah AM: Correct, yes.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): We were approached by the borough a couple of years ago, they had their regeneration area there where they compulsory purchase ordered (CPO) the land and they are, therefore, the landowner. 50% of the developments they will lease the land for the planned development, and I think they are selling a further 50% of the land to developers.

The arrangement that we advised them on was to ensure that an area-wide network would be built, given that the borough had no money to invest in it itself, would be to emulate the Olympic Park arrangement by creating a concession area. That would give a guarantee that an energy service company (ESCO) could be appointed and the ESCO could feel comfortable that they would be allowed to connect to all the new developments within that scheme without risk of individual developments sourcing their own individual energy supply arrangements. E.ON might want to comment about these risk elements. We were trying to help there to de-risk it for the private sector to come in. We did some preliminary calculation that indicated that there could be a potentially viable scheme there. There were a number of issues thereafter around the terms under which the developments will connect to the heat network.

Brent have taken this project to market a couple of years ago to the OJEU. I think they have shortlisted possibly three ESCOs but they spent a considerable amount of time having to develop the terms on the heat supply arrangements, so at least the developers know what they were getting into.

The first buildings are being constructed now and the future developments will carry out over a number of years. I think it is important to learn from here that development of these projects does take a long while. You will not install your CHP system until at least 60% of the available heat loads have materialised because it is just a poor investment and it is operationally not effective. I think Kilburn is a very good example of some of the issues that we face. I am not saying it is delayed because the developments are not coming forward at the rate but it requires a lot of support and encouragement to maintain the development team there and go through all the commercial issues that they are beginning to face. It is not a technical problem on that site any more, it is trying to resolve the commercial arrangements that satisfy both the developer, so they know what they are going to get into and how much is it going to cost, and the ESCO that the risk profile is adequate for them to make that investment on that site.

Navin Shah AM: Do we have any idea about completion? Because it does obviously help a lot of schemes and this is an important project.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): We have slightly drawn away from the project, so I am not familiar with the current development programme at this time. Once again I would have to talk to the project team there.

Navin Shah AM: I would be grateful if I could have some further information, as I represent that constituency. Thank you.

Murad Qureshi AM (Chair): It is interesting. That project has been around since 1997, in my recollection. This is why some of us have kept an eye on that one and it does not seem to be making so much progress.

Matthew, you gave the figures for the amount of renewable or decentralised energy going up from about 2% to about 5%. Is the Mayor's office making any attempt to persuade those that do not use renewable sources with the decentralised energy, to make them renewable?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): In the planning system we have very strict carbon targets in that we have been delivering, as I said in my opening remarks, over and above those quite substantially in the last two years. Part of that when it comes to development, would that be a CHP engine, so obviously burning gas as a fossil fuel, or would that be putting PVs on the roof, or whatever it might be?

We say that when it comes to the policy leaders the Mayor has control over he is pulling them, as I said, as hard as I suppose he can. It is worth pointing out that Afsheen asked for support from City Hall. In fact the specific project that she is the Chair of, Brixton Repowering, which I can pretty much see from my front door, did actually grow out of a Low Carbon Zone project, which we ran here from City Hall. We have in some cases supported that and nurtured that and we are in conversation with other groups in London.

Equally when it comes to diminishing budgets, we have a diminishing budget, as you all know, in City Hall as well. It is not something that we can go away and spread the Mayor's largess because we do not have any. When it comes to the planning system and also a support role - and I know I have spoken to and my officers have spoken to - but when it comes to nurturing these kinds of community energy schemes I do not know if any of the Committee have gone to visit it, it is worth a visit to see what they up to and how they are engaging with the community and have apprentices who are there and helping to install the stuff.

I think it is worth making a final point when it comes to PVs that it is quite exciting now that Ikea is going forward to actually selling these things. Because the cost of PVs has come down, the fact that it is now entering a High Street DIY shop actually does show the potential of that particular technology.

Murad Qureshi AM (Chair): OK. I note it is the planning system again and it may be an idea to do something joining with the Planning Committee on this front, if we can see how that enforcement can be done better on the energy front certainly.

Jenny Jones AM: Matthew, we heard from Reg that a dedicated PV policy might be a good idea. I have only just skimmed this¹ because we only got it last night, your Annual Report on Climate Change Mitigation in Energy (CCME). I could not see anything in here about PV.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): As I said, as these things go through the planning system PVs are part of the technologies that we could use for new developments to address the carbon targets that we have. However, it is true that our focus has been more on these heat network projects because these are going to deliver more of the scale and more in a way that we can actually control and deliver the carbon savings but also the wider-scale, cheaper and more secure energy.

Jenny Jones AM: If you actually start putting a lot of PV in you actually make individual households much more secure on energy and you reduce their costs, so I am not sure if you are right about the impact.

Reg Platt (Senior Research Fellow, IPPR): I had two points to contribute on this, I think, the first is in terms of what are the policy levers that are available for trying to promote solar in the capital? Planning can obviously have a role to play, particularly with new developments but we are looking at a huge retrofitting opportunity here, so what are the levers that can be pulled by the Authority in terms of retrofitting? Even on domestic households there is a huge opportunity which does not seem to be being exploited in the capital at the moment. As I have said, there is an awareness in Government, and it is quite clearly happening here in London as well, that there are these medium-scale installations which need some kind of promotion. That might be quite a soft-type policy approach, going out and making sure people are aware of the opportunities and so on. I think there just needs to be some thought about things other than planning for the retrofitting side.

The second point I would make is that this is important for hitting the decentralised energy targets of course, but it is some of this issue around the economics and solar. Everyone in London is paying the surcharge for the feed-in tariff at the moment and not getting the opportunity for that, so the benefits from that subsidy are currently being taken by the rest of the country and not by Londoners and their energy bills are going up to pay for that. There is a specific economic advantage to help the London residents and businesses to take the opportunity there.

Jenny Jones AM: Thank you. That is a very good point. For me it is all the big toys. People love big toys and big results, but sometimes the small toys give you a multiplicity of results that actually are more beneficial.

Andrew Richmond (Policy and Programmes Officer, GLA): I would just like to explain a bit more about a piece of work that we have got timetabled in for the next two years that Matthew mentioned, which was the Spatial Energy and Infrastructure Plan. It still has a number of names at the moment, we have not quite decided what to call it. This will be a follow on from the Infrastructure Investment Plan which will identify the amount of investment what

¹ *The Mayor's Climate Change Mitigation and Energy Annual Report* – updated activity for 2011-2013

needs to be put in London in order to meet our energy needs and meet our carbon dioxide CO₂ reduction targets.

What we want to do after the Infrastructure Investment Plan has been finalised, or at least we know the direction that it is moving in, is look at mapping out everything, all the technologies, all the opportunities around energy generation, energy efficiency, energy minimisation, look at that spatially across London and look at having a piece of strategic-- in fact it will not be a piece of policy, but it will feed into the next iterations of policy and it will look at where best to deploy certain measures such as energy efficiency, solar, both spatially and thematically. That will give a strategic direction to developers and to local authorities as where we have mapped out and considered it best to deploy. We will look at solar as a part of that package.

Jenny Jones AM: Thank you for explaining that. I am astonished you did not do that at the very beginning, quite honestly. You would have thought you would have had to have understood the overall need in London.

Andrew Richmond (Policy and Programmes Officer, GLA): It was done four or five years ago, before the plan, not in a public-facing document, in order to inform the CCMES. Yes, things have moved on in terms of the policy framework, national government framework and technology, and it is something we now consider needs to be relooked at.

Jenny Jones AM: I think you should get a move on on that. This is clearly a set of levers you are not pulling as hard as you can.

Can I come to you, Mr Leiper? Can you tell us about the market appetite for decentralised energy and, my particular interest, renewable energy?

Don Leiper (Director of New Business, E.ON Energy): I think the market appetite in London is quite high, particularly for district heating projects at the moment, because of the way London has chosen to go about incentivising at the new build planning stage. Because of the 40% carbon reduction target that has been imposed above and beyond the code levels, of level 3 and now 4, it is not possible just to use building fabric to meet the carbon targets which the GLA is imposing in the London area.

‘Appetite’ is an interesting choice of words in some senses. In order to be able to build new residential properties in London, district heating becomes the best way of delivering that for reasonable scale projects in order to meet those planning requirements. Whether you would really say that all of the developers have an appetite for district heating might be a slightly different question. If they want to build in London I think they have to accept that it is the right way forward. I think what we have seen happen over the course of time is a progressive acceptance by some of the house building developers to the point where actually now they are embracing it quite openly and others still have a lot further to go. It is just part of the norm I think now for some builders in the London area just to accept and to get on with it.

Appetite from the consumers’ perspective could be regarded as a little bit different, so people are quite used to it in blocks of flats and so on, those kinds of principles. For houses it is a

slightly different proposition and it does take some time for customers to get used to the idea of being attached to a district heating network, as opposed to having their own personalised gas boiler and the control that they feel they might have there. There is a lot of work that needs to go upfront in terms of explaining to people as they register interest in properties that are attached to district heating networks that this is what is about and this is how it is going to work and this is why. I think the appetite can be at multiple levels.

Jenny Jones AM: Renewable?

Don Leiper (Director of New Business, E.ON Energy): Renewable components at the moment, so there is a fairly limited renewable aspect to what we do for the heating networks we do. We have some biomass CHP units and some biomass plants in our heat networks but it is not the predominant volume capacity of what we do. Part of the meeting of the code level requirements is to have a certain proportion which is biomass and the rest of it comes from the gains you get from producing power locally, avoiding transmission losses and being a lower carbon mechanism than the standard grid that is.

Jenny Jones AM: Do you think London is going to be able to actually generate a quarter of its own energy from decentralised sources by 2025?

Don Leiper (Director of New Business, E.ON Energy): I do not know, is the answer to that question, I think it is fair to say. In terms of the new build that is going in, quite a lot of it can get progressively down that path but I think you need to do a huge amount more than new build. I think we have touched on it once or twice already. The planning requirements for new build are good and are strong in London and I would absolutely encourage you to keep pushing forward at a national level for pushing to code level 5 and 6 for sustainable homes and supporting that local planning can indeed top the national planning requirements, which is what you do. I think it is really, really important to be able to progress, but you have to go beyond new builds to get anywhere near 25% into the retrofit market. There I think London and the Mayor can play a very strong role, particularly around heat networks and developing them beyond new build and into the retrofit world.

Jenny Jones AM: Thank you. Reg, you mentioned earlier the German model. Do you think that is the way we should be going? Because Germany already generate I think a quarter of its energy from renewable sources and is increasing all the time. Do you think that is the sort of thing we should be aiming for?

Reg Platt (Senior Research Fellow, IPPR): I think there is a good part to the German story and a substantial downside to the German story as well. The downside is that the costs of the *Energiewende*, the renewable transition in Germany, are very high and are causing concerns among consumers, concerns among businesses and so on, which is very much driven by the national level policy strategy. What is very interesting in the German approach to this transition that we are going through in the energy system though is the engagement of community groups, yes, and then also municipal authorities much more actively in the market. Licence Lite is something that will come up later in the discussion. That I think probably is where we can take our biggest lessons from Germany, which is about ways of bringing new actors into the

energy market who can help bring in and bring support for renewable technologies, bring new ways of engaging at the local level and bring new thoughts about how to actually deploy some of this new kit.

IPPR, we are currently working with the Core Cities Group, all the major cities outside London who are currently making plans to enter the energy market over the next couple of years as energy suppliers, which we see as a very big opportunity for community energy. I think these community-level schemes are very important but a much bigger vision actually, which I would say is the municipal energy vision, where you have very active engagement from municipal authorities in the market, working at a large scale as suppliers, potentially generators of renewable energy as well, and bringing in individuals and communities within that wider vision, which I think is above the vision that DECC currently has for community energy, for example, which is still very much around small scale projects.

Jenny Jones AM: It would get us out of the clutches of the energy giants.

Reg Platt (Senior Research Fellow, IPPR): Yes.

Jenny Jones AM: It would engage local people in their own energy supply and make them aware, but it is also a source of income. It would engage local people in their own energy supply and make them aware, but it is also a source of income.

Reg Platt (Senior Research Fellow, IPPR): We used to have a larger municipalised energy system in the UK, there used 600 or so energy companies back in the 1940s. Liverpool City Council used to get 10% of its revenue from the energy system. There is a revenue opportunity here as well as an opportunity to promote local jobs and growth through the decarbonisation transition. There is an opportunity to take value out of the energy system, which is currently going away through very large multinational companies and redirecting that back down to individuals and communities. I think that is where some of the most exciting possibilities are in that kind of engagement. Licence Lite I think is a very interesting innovation. It sounds interesting. I would like to know more about what is happening in that area. What we are looking at with Core Cities is a step beyond that, because what we are talking about is actually rather than being the third party and having that relationship with an energy company, is actually being the energy company itself.

Jenny Jones AM: You make money out of your energy production and you also reduce dependence on fossil fuels, so it is a very successful model, surely.

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): Yes, I definitely agree with what Reg has mentioned right now in terms of being able to take that relationship with local authorities to really have ownership. Maybe we are looking at joint venture models or where the local authority shares the vision but community groups are involved. I would really like to see a future London looking like that, where we have more suppliers and communities taking ownership. We would be very open to having discussions with the GLA with how their Licence Lite can then apply to organisations like Repowering London in the future as projects and the generation capacity increases.

Our feedback from the estates and residents there are, “OK we have got the solar panels there, we are part of it, we are earning an income from it, it is keeping the system going, but how can we actually get the energy directly to our flats? Because at the moment we are connected to communal supplies” because you cannot do it for individual flats. Maybe there is a potential here again to use Licence Lite and the expertise that exists within the GLA to support groups like Repowering London to provide energy directly to residents. So you are supplying locally owned, clean, green, renewable energy to residents. If the Licence Lite allows you to reduce costs by 30% then how can we make that a more localised energy generation and supply?

Jenny Jones AM: Do we want to hear a bit more about Licence Lite, do you feel? Would anybody like to explain it?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): About this time last year we applied to Ofgem as the first public authority to apply for a junior electricity licence and what this will essentially do is we will act effectively as a broker between the excess capacity of public sector CHP engines and we would sell that to other public authorities. The logical customer for that is quite clearly Transport for London (TfL) because they are the biggest energy consumer in London and could suck up pretty much all of that, certainly in the short to medium-term. Obviously we have some influence, we like to think, over TfL. We have just gone out to OJEU to tender for the market services we will need to run that system. That has just gone out, I think, last week.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): Last week.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): As I said, I can think of two companies who have expressed interest. Hopefully we will get some more and we will see how that goes. We hoped to get this up and running by the end of this calendar year.

It would not reduce costs actually, what it would do is increase the income. At the moment with the Big Six arrangement we think we can improve their income for that excess electricity by 20% - 30% but we will see how the business case works out in time on that.

Jenny Jones AM: Do you want to comment on that, Reg?

Reg Platt (Senior Research Fellow, IPPR): I will be interested to see how it plays out. As we are aware it has been quite a challenging potential arrangement the Licence Lite regulations that have come out of Ofgem and it is very good that the GLA has taken the steps to try to see if this licensing arrangement can be made to work.

TfL is a huge consumer of electricity, so doing something down that route does make sense. Just reflecting back on some of the other work that we are doing about this vision for taking a more active role as that first point of call in the energy market for a municipal provider, would London citizens be interested in getting their energy from something which is backed by the municipal authority as well? That would be my question. Something which is bringing social

value back from the energy system into London communities, hooking it up to locally decentralised renewable sources of energy, promoting local jobs and growth. There is a big vision here which I think is a really exciting role that cities can take, and some are across the country, in pushing forward a localised energy agenda. There is an issue and we have got in here and I do not think DECC has quite got hold of this issue yet and potential here, so I really would hope to see cities pushing national Government because I think you can start demonstrating that this stuff is possible on the ground. We can generate quite a lot of momentum.

Jenny Jones AM: Thank you.

Andrew Dismore AM: It was to do with what you are saying about consumers, because there are a couple of these projects in my area, particularly in Colindale, for example. The complaint I get is, “You’re a monopoly supplier” and that they have to pay what you ask and they have little choice about changing supplier and they think that is rather unfair. They think they can get a better deal from another provider.

Don Leiper (Director of New Business, E.ON Energy): We understand that. There are several things in response to that. First of all I think we need to make sure there is a recognised national standard against which suppliers of district heat should be measured, particularly when they are talking about residential consumers. We have been driving the CHP Association to put that in place for the last 12 months or so, because we recognise that is an extremely important customer protection. So there is an official customer protection route, if you like. We also are very clear that the price point we provide for the system in the properties is comparable to or better than the equivalent price of heating their property in aggregate from another source. If you think about it, as Matthew was saying earlier, people do not have their own gas boiler to maintain and repair and replace over the course of time and then they have to take the heat coming into the system. If you compare that total system cost to what the costs are that we provide to people we can match or beat, or else we will not do a scheme. If it turned out to be a scheme which is more expensive or we cannot do that then we will not do a scheme, so it has to be matching or better than the price position from gas to boilers for heating and hot water or power into flats and so on, but for heating.

That is then written into the contract that year-to-year we will review the price point every year and we will make sure that it is clear and document that that price position remains intact year after year.

Andrew Dismore AM: There is a lot of work to do convincing the customers.

Don Leiper (Director of New Business, E.ON Energy): It can be hard work convincing customers, particularly around the fact that they do not have their own boiler, so they can compare the pennies per kilowatt hour price to the gas pennies per kilowatt hour price, or the standard charge, and it does not compare when you look at uSwitch. However, they are not taking into account necessarily the whole picture so we maybe need to do a better job explaining it but we have a lot of schemes where we do not have any issues. Colindale is an interesting one.

Andrew Dismore AM: Interestingly enough, this morning SSE announced that they are going to be freezing energy prices until May 2016, so it will be interesting to see.

Don Leiper (Director of New Business, E.ON Energy): We have not debated it.

Andrew Dismore AM: You have not debated it?

Don Leiper (Director of New Business, E.ON Energy): We have not debated the SSE announcement, because I only read it on the Tube coming in.

Andrew Dismore AM: Never mind their announcement, are you going to match their pitch to freeze prices?

Don Leiper (Director of New Business, E.ON Energy): You know very well I could not give you a response to that without agreeing something with UK Board in advance.

Murad Qureshi AM (Chair): It shows it can be done.

Don Leiper (Director of New Business, E.ON Energy): It shows it can be done. There are some interesting counter facts in there. The other thing they have said they would do would be splitting their generation, trading and retail divisions into separate legal entities, which is something we have done for many years, and we completely agree that that is the right thing to do. They have also talked about - we were having a very brief chat about it beforehand actually - that they now expect to make a lower margin in their retail business in exchange for which they are going to invest less in their generation and renewables business, which is kind of an interesting trade off when you are talking about separating those two things out completely under legal structure. So there are some things which we will obviously need to follow through, look at and see whether it is an appropriate thing for us to respond to in some way, shape or form.

Murad Qureshi AM (Chair): OK, thank you for that, Don.

Just to sweep up there is just one or two things, just to reassure Reg and Don, we have looked into retrofitting quite extensively and know the potential there. We do keep an eye on the Mayor's programme on retrofitting.

Don Leiper (Director of New Business, E.ON Energy): You were referring to the risks earlier. Clearly, one of the main risks to capital intensive projects like district heating networks is security of customer base over the course of time. In other parts of the country they have now moved to a presumption to connect to heat networks. If there is a heat network available, with suitable carbon credentials, to connect to either at the point of renewing, for example, a public building's boiler system specific to its own properties coming up for replacement, there is a presumption to connect to a heat network if they can make that happen. We now have 19 in London, any of which can grow and some of them are very close and quite large to, for example, the Barbican or Barts Hospital. We are having interesting discussions with Barts who,

theoretically, are meant to be connecting to our heat network but are trying to do something a little bit different. Therefore, I think a stronger push around presumption to connect at appropriate points of investment can be made as part of retrofit planning.

Murad Qureshi AM (Chair): OK, so presumption to connect.

Jenny Jones AM: What other projects are in the pipeline? I think you did mention a few. The acoustics in here are not particularly good and I did not quite catch them all.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): We have quite a list. Peter can probably give more information on how far we actually are down them.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): OK. These are projects that we - as the GLA - are supporting to bring them to market and bring them into investment. I would say we have been successful with five to date, and this is both through our work as the Centralised Energy Project Delivery team, and the forerunner to that, where I was involved in the --

Jenny Jones AM: We want the future stuff.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): OK, so you want to look at where we are.

Jenny Jones AM: Yes, and when they will be operational.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): OK. I cannot guarantee when they will be operational because it is not in my gift to bring parties together to enter into contracts, so there is always a great deal of uncertainty. A lot of these projects are very much dependent on individual board decisions or cabinet decisions. That is not within my gift either.

Jenny Jones AM: OK, we will take that into account.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): It is all foggy in that area of guarantee. We have 20-odd projects in our pipeline and we categorise those into those that are quite high in probability to deliver, and those that are slightly a bit further out in terms of timescale. Lee Valley heat network - as we have already talked about - we have been working with the London boroughs of Enfield, Haringey and Waltham Forest to realise the vision of what could be supplied in that opportunity area. The business plan for that area looks at supplying into north Tottenham. That has some political connotations, on which I am not an expert by any means, about Haringey determining how it brings its north Tottenham projects forward.

Within that we have identified small satellite projects within Enfield that could be brought forward using gas CHP now, and in the fullness of time, as those schemes expand and heat off-take from the Edmonton Energy from Waste Plant materialises, those gas engines can be

replaced by a connection to the main heat network. It is strategically and tactically important to understand that there is a role for gas today to capture the heat lobes now but a masterplan that allows this progressive connection to the more strategic heat source over a later period.

We have a project on our list here, Ladderswood, which is a borough initiative, so it is within their gift to predicate to CHP and to move this project into the Lee Valley heat network, which is a company being set up by Enfield. It is not a technical problem. It is one of business planning and governance within the borough.

We have been working with Kew Gardens, that you will be familiar with, out towards west London. It was our refit team who did a lot of initial work there on building energy efficiency, and the refit team brought us in to look at how CHP heat networks would save them quite considerable energy costs. The slowness of that has been about issues around planning, issues around whether they can fund it. Once again, these are not technical problems. These are all planning and governance-type issues.

Blackwall Reach, which is a development site just north of Canary Wharf. It is land jointly owned by the GLA and the -- I am not very good with London boroughs, strangely enough. I know all the technology.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Tower Hamlets.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): Tower Hamlets. Thanks very much. I can tell you all about the technology and the connection. We are the landowners there and Swan is the development company that have the rights to develop the first initial phases, but once again we have the plan to do the whole system there.

Jenny Jones AM: That is not flood plain, is it?

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): Pass.

Jenny Jones AM: Or between rivers or -- OK.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): It is an existing site that has been raised. It is formally a residential site. I could not comment on the flood plain issue.

We have done the technical feasibility, so we know the carbon savings, the investment levels and financial savings. We have been helping the GLA, Swan and Tower Hamlets come together around a joint agreement to procure an ESCO and that has been quite difficult. I think this year that should go to OJEU and the ESCO market. E.ON, etc, hopefully will respond to that.

Lakeside Heathrow, so the Lakeside energy from waste plant sits just outside of London's boundary. We attempted to do an energy masterplan around there with the London borough, which escapes me again. I am sure Matthew will --

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Hillingdon.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): Yes, Hillingdon. We had a very poor response from Hillingdon about their interest, but we knew there was a strong opportunity to supply heat into Heathrow into their existing district heating network. Our role there was to ensure that the connection and the equipment is built at the largest possible capacity to enable an area-wide heat network to develop. Left alone it would have been a small pipe into Heathrow and no capacity or means to do anything else, but with our assistance they have agreed that they would invest in the larger pipe around that.

Jenny Jones AM: How many more are there?

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): Sorry, oh yes, we have loads.

Murad Qureshi AM (Chair): That is a very useful intervention. Could you provide us with that list if you do not mind?

Keeping track of it all is quite difficult and I am sure it is for yourself, although it does help to know the London borough boundaries. The other thing that we would like to know is to what extent they are being funded by the London Green Fund? We heard quite a bit about the set up of the London Green Fund. I am not asking for it now, but if you can give it to us in writing that would be very handy because we were told about the use of EU funding on this front. It would be useful to see what progress we are making.

Andrew Dismore AM: OK. I suppose the general question to start off is what the benefits are of community energy projects, how can they be promoted? I think it is probably one for Afsheen to start with.

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): The benefits that we have developed in our model is -- amazingly when you use technology like solar panels it really connects people to their energy use and it is about raising that awareness. While we are generating energy we also want people to use it wisely. We are looking at reducing the demand for it as well. That helps to bring people closer to where their energy is coming from and the usage of it.

By owning it they have a better sense of responsibility again, and that brings them closer to what is the cost for energy. While it is a resource that should be available and affordable, we should also remember that it has a cost attached to it. We are not saying that it should be free but making people realise the impact of what they are using and connecting them to the management and understanding what is involved in the generation of it. It raises that kind of awareness as well. When you are talking about district heating schemes, and how you communicate with people, if they are local people who own and manage it then they have a better sense of responsibility and there is that better tie in with the system as a whole.

Andrew Dismore AM: You do not think they are being ripped off like they think with E.ON?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy):

Let's not comment on that. What we have done in our scheme is build a lot of training and work experience within the scheme. People living on the Loughborough Estate are involved in getting a sense of what is community engagement, organising events. These are young people who are getting the opportunity to be engaged in a scheme from start to finish, to look at and understand what is a co-operative, what are corporate models, the practical, making solar panels. That gives them the soft skills of developing and understanding where they want to go after they have completed school or their degrees.

When we install the technology itself we have supported at least five to ten local electricians and local residents to gain from work experience, so they are part of the workforce installing the solar panels. Those are a few of the social benefits.

Andrew Dismore AM: What are the challenges in terms of doing this? You have given us the idea of what the benefits are but what are the challenges?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy):

Communities have a lot of friction, dynamics, so I think the challenges are working with a group of people, bringing them together, joining them with a common vision and taking things forward. Sometimes that can be quite challenging. It requires a lot more time to build that community and get people together, identify who are the leaders or who would like to lead on such schemes. Often you are engaging with residents with a lot of conflicting priorities. If you talk to them about, "We are here to reduce carbon emissions" it does not mean anything to them. It is about bringing the message closer to them, in terms of costs and affordability, living in warm, affordable, dry homes. It is how you communicate with the residents that is quite key to what we do within Repowering London. That is why we built in work experience and training opportunities. That is what matters to the local communities and that is what attracts their attention and gets them involved in the schemes. Those are the challenges.

Andrew Dismore AM: What do you think the Mayor should be doing to support development of community-owned operations?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy):

I would like to pick up on what Matthew said earlier. You are right, the Brixton Low Carbon Zone had been a catalyst and that was a Mayoral funded programme. I managed that programme and that is how Brixton Energy took birth. I would like to see more of those schemes. The Low Carbon Zone is a community-led scheme. It brought together local authorities, communities, businesses and companies like E.ON together in a focused local area. The funding that came from the Mayor was small and it helped catalyse and bring together different players in a local area to work together.

I do not think the Mayor's office has highlighted the Low Carbon Zone as much as it should have. It did bring a lot of value. I know there have been other schemes like RE:NEW and RE:FIT. Those are more centralised procurement frameworks whereas this allowed for

communities to be part of something big. I would say such schemes where local authorities can take a lead or support communities to take a lead role would be a way of moving forward.

You listed out all your schemes, and I think that is really great, but is there appetite within the Mayor's office to look at testing the community-based model for district heating networks and is that something that can be taken forward? I know there are a lot of complexities involved in such a development anyway, but as the expertise exists within the GLA if there can be a level of confidence built in, because we are working with the GLA and the community and the local authority, then that can help. If we test out a model then that can be used as a model to scale such schemes across London.

Another area where I think we can potentially see ways of supporting community energy is through the new development where you have the Community Infrastructure Levy (CIL) and section 106 funding, where developers are not able to meet their carbon reduction targets. How can you challenge that funding for local community groups to unlock some of the potential in the local area?

Those are a few suggestions.

Andrew Dismore AM: Questions for the Mayor or the GLA. How do you respond to that? What are you doing to support these sorts of projects? It sounds as if you could be doing an awful lot more.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): That is not what I would take from what Afsheen said. I would say that she was quite complimentary about what we have been doing. On the last point that she made, on how the monies that developers need to pay because their development meets the carbon targets, that is a borough responsibility. It is not the GLA. I do not think the boroughs would like it if we took over that responsibility.

When it comes to conversations on community heat networks-- You even referred to the difficulties there are that we are finding as it is, but I do not see why we should not have a conversation about how that might be possible. If we have a planning authority, like the borough, which is engaged and is leading that project, then I see no problem at all with why Peter and his team should not have a conversation to see what might be possible.

Andrew Dismore AM: Are you happy with that, Afsheen?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): Yes. I will hold him to it.

Andrew Dismore AM: I have a question for Matthew next. Over the last year the Mayor has made a lot of interventions about how rotten wind farms are and how good fracking is, and that sort of thing. Do you think that is a sensible contribution to this debate about community energy, about devolved energy systems and the climate change debate when we have the Mayor effectively promoting things that are going to affect climate change and these are going to help?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I do not think that analysis is fair at all. We have the target here of making London's energy supply more secure, lower carbon and lower cost. That is through more local generation. When it comes to the national picture - which I think is what the Mayor was referring to - it is a pretty ludicrous situation that this country finds itself in. In about a year or two our energy capacity headroom is just about 2%. How on earth did we end up in that position? I am a politically restricted officer, so I will not put what my personal opinion might be about how on earth we got into that position, but we are where we are and I think it is quite important that the Mayor makes a statement as a politician about potential solutions.

He has made comments specifically about onshore wind farms. We have heard comments about what has happened in Germany, and it is held up by some as the energy solution. Well, I am not sure that is true because you see huge costs of energy in Germany. We have seen BASF, a very major industrial engineering and production company in Germany, talking about moving elsewhere because it cannot afford the energy costs. You have a situation where, where the sun shines and where the wind is blowing, the energy is being distributed all across Europe because it is very cheap. They have to give it away. Then suddenly, when the sun isn't shining and when the wind isn't blowing they have to suck in energy from Poland and nearby countries, often from very polluting coal fired power plants.

We have heard some of the downside of it. Is it the energy solution? We are not sure. You need a base load that is reliable and it is the Mayor's view that that base load should be new nuclear, because the problem with relying totally on renewables is for every wind farm you need two wind farms, because if the wind is not blowing in one part of the country it needs to be blowing in another part of the country to keep the lights on. These are the comments the Mayor is making.

If you look also at what is happening in the Crimea and the geopolitical energy market that is going on, should we be relying for our medium-term energy supply, which will remain to be natural gas for quite a while, on countries that are politically hostile or potentially politically hostile to the UK? Would it be a good idea that the energy supply that we need to keep the lights on in the medium term, as the new nuclear comes on line with renewables you can store the energy in a more coherent way - we cannot at the moment with wind farms and the rest of it - should that gas come from countries that can just turn it off or are potentially politically unstable, or do you get it from underneath your feet? I think that answers the question.

Jenny Jones AM: I just want to say on Germany, it is true that they are using more coal because they are not using nuclear or more coal than they might have done otherwise because of their ban on nuclear, but at the same time it is a better technology. It is not the same heavily polluting coal-fired power stations that we have here, so it is not as bad as --

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): A switch from nuclear, which is zero carbon, to coal-fired power stations sounds very foolish to me.

Jenny Jones AM: It seems to be working in Germany.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I have said how in my view it has unintended consequences. It is causing huge energy price increases leading to German industry thinking about moving elsewhere.

Jenny Jones AM: I think the Government understood about those price increases, so it is not unintended consequences.

Murad Qureshi AM (Chair): I was just interested, while you are right to emphasise we should be concerned about our reliance on gas supplies but we are not terribly dependent on the Russians for gas while other bits of Europe, like Germany, clearly are and it just emphasises again --

Jenny Jones AM: We also subsidise nuclear in this country, let's not forget.

Murad Qureshi AM (Chair): True, yes, but we are not dealing with this on a national level.

Jenny Jones AM: The costs are costs to nuclear that are never taken into account, so it is not a simple equation.

Murad Qureshi AM (Chair): I do understand the sentiments you are making but the energy security arguments for going much further down this road are clearly there and it is a case of how we manage and make that progress, certainly in comparison to other regions in the UK, but we do not seem to be doing as well as we could be is my general reading of the situation here. If that is enough on community energy, we have strayed into global politics there. Can I suggest we get to simpler things like transport emissions?

Navin Shah AM: The Mayor's target in his climate change mitigation and energy strategy was for 100,000 electric cars on the road as soon as possible I think as he put it. The question is what is expected to be the share of the electric car fleet by 2025?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I do not think we can reasonably give a figure for that. That is obviously a long way off and it is very dependent on the market and the vehicles that people want to drive. I think you are absolutely right, Navin, to raise the fact. I said this before; it has been disappointing the relatively low take up of pure electric vehicles. The hybrid market has been very successful and obviously the Toyota Prius was a trailblazer for that. You see lots of these vehicles around now. When it comes to pure electric the take up has been disappointing. There is a chicken and egg issue over the installation of the Source London charge points, which we hear constantly repeated, obviously in the media.

I would say that the Mayor is pulling the levers he can to try to stimulate that market, so we have the Source London network in and hopefully the take up of that will be used more. It is very interesting that the company that has now taken over that has a very ambitious plan for using those charge points and getting more penetration in the electric vehicle market.

I think that the launch of the BMW i3 last year is perhaps the beginning of a tipping point - if you can have a beginning of a tipping point - where you have a premium motor manufacturer bringing to market and spending a great deal of money on marketing this new vehicle, so much so that I understand that they have been selling quite well. Is that the beginning of a change in the market? The automotive industry is now producing vehicles that people want to drive. I think it is also worth noting that we changed the congestion charge discount to the Ultra Low Emission Discount (ULED) last summer, with the intention to stimulate the take up of ultra low emission cars. An issue which I know Kit [Malthouse AM] has also raised in this Committee previously.

I was quite heartened to see adverts very rapidly on billboards, and I am going to plug the Renault Zoe, because that is the advert I saw, saying, "You can beat the congestion charge by buying this car", which is exactly the reaction I wanted to see when we decided to do that. Finally, there is the Ultra Low Emission Zone (ULEZ), which I know we have discussed quite a lot and you have questioned the Mayor quite a lot. The main reason for that is to address air quality in the area of London that has the most human impact, which is central London, but also absolutely one of the Mayor's drivers is to pull the regulatory levers he has to stimulate the market and individuals to take up Ultra Low Emission Vehicles.

Therefore, I cannot give a figure of what I think it will be by 2025. Because of all these variables we just do not know. I think it is fair to say the Mayor is doing what he can to try to get more of these cars on the road and for the market to deliver vehicles that people actually want to drive.

Navin Shah AM: Do you know the current number of electric cars on the road in London?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Somewhere in this there is a figure. It is a few thousand. It isn't very many.

Navin Shah AM: Is there any idea whatsoever what the figure might be in 2015, given the production? You mentioned Toyota and so on. Is there any estimate whatsoever by 2015?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): 2015 is obviously a lot closer. I can probably get back to you with an estimate for 2015 because that is just two years away. I think 2025 is impossible for me to say.

Navin Shah AM: Right. Can you tell me what CO₂ savings are expected from switching to cycling by 2015?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): The truth about cycling is in reality it does not result in a huge amount of carbon savings because most cycle journeys are people coming off public transport. I cycle to work. I am not getting out of my car. I am getting off of the bus or the tube. Therefore, I think the carbon mitigation that cycling drives is not that huge. What you are doing is obviously it is much healthier to cycle to work or cycle generally, and you are obviously freeing up capacity on public transport by

cycling, but the actual carbon mitigation impacts of cycling is not a huge one in reality, so we do not have hard figures on that.

Navin Shah AM: Carbon mitigation from switching from private cars to public transport is great. What is being done in terms of making public transport more affordable, so that we inspire and encourage local people - workers, everyone - to switch to public transport more than they do? That is where we are going to make a huge impact on transport emissions. Are there any plans, studies or strategies to drive in greater subsidy for public transport use?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): It sounds more of a question for my colleague, the Deputy Mayor for Transport, rather than me I would say, when it comes to fares.

Jenny Jones AM: Apparently, in 2008 - these are the figures I have - there were just under 1,800 pure electric vehicles and this has increased to 2,500 by 2013, but at that rate it is going to take 750 years to get to the 100,000 target. It is good if you have somebody with a very aggressive policy to follow through on that.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): That obviously assumes your graph is doing that (increasing at the same rate). We hope it is going to do that (increasing at an exponential rate).

Jenny Jones AM: Yes. No, we all hope. In November last year the Mayor announced his intention of London buses using a blend of 80% regular diesel and 20% biodiesel, but part of that ambition is establishing a large-scale biodiesel refinery here in London. Is there any progress on that?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): We have conversations with a series of potential biodiesel refiners - I suppose is the right word - and people are coming to talk to us. Our job is bringing parties together. We do not operate the buses directly; the routes are contracted through TfL. What we are seeing is that the pilot in Barking has been a success. There have been no problems with the engine. There has not been an air quality impact, etc, which is fantastic. Now we are seeing more bus companies wanting to try it out in their garages too and have blended fuel arrive at the bus garage. It obviously does mitigate the CO₂ emissions. What the Mayor wants to see is London's used cooking oil and London's fats, oils and grease (FOG) to be kept within London, to be used within London, rather than at the moment they are exported often to the continent or even to North America.

You can have that circular economy idea, in that London's waste product and used cooking oil and FOGs can be used to help to power London's buses. As soon as you have the funding capacity at scale producing the sort of quality biodiesel that we can put in our engines so they do not affect the warranties, and that kind of thing, then suddenly the haulage costs drop. At the moment it has been hauled up from Scotland, or the very north of England, and then it becomes very price competitive with mineral diesel and you get an absolute win/win. You get the jobs and growth of people operating the system. You get the carbon dioxide mitigation, and there is no cost to take and fare payers and this is what we are trying to do.

Jenny Jones AM: You are just brokering deals, are you, on this or trying to? You are not going out to try to sell the idea?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): We are selling the idea as loudly as we possibly can. We do not have a big lever to go, "Every single bus must run on 25% biodiesel. You must build a biodiesel refinery there". We do not have that power. We have the power, however, to bring groups together. We are having genuinely interested companies, which I do not think otherwise would have been if we had not started this conversation 18 months or so again.

James Cleverly AM: With regard to future planning around charge points and that kind of stuff, can I get an assurance from you that you are not taking a linear progression in terms of the penetration of electric vehicle ownership, and that you are basing your future assumptions more on the graphs that you would see in, for example, personal computer ownership or tablet computer ownership which do not show a linear progression? Because otherwise I am worried that we are going to massively underestimate the penetration of electric vehicles in society over the next couple of decades.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Yes, I was waving my arms around trying to illustrate graphs earlier. Also that applies to some of the energy supply stuff we were talking about earlier, so we referred to work slightly off the 2015 target. Again, we expect an uptick on that as well, so yes absolutely. Jenny talked about 10,000 years or whatever it was going to take to get --

Jenny Jones AM: 750.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): 750 years.

James Cleverly AM: Ignore that figure because it is bunkum.

Jenny Jones AM: What, hey, the Greens are very good on our research.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Clearly that assumes a linear progression. We are not going to see that.

James Cleverly AM: Can you name any technology that has had a linear progression in terms of its uptake?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Perhaps it is Betamax.

Andrew Dismore AM: One problem with this particular argument is it is a bit of a chicken and egg, isn't it? People are not going to buy electric cars unless there are lots of charging points. The incentive to have the charging points is dependent on there being lots of electric cars, so how do you square that circle?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I raised that. You are absolutely right. There is a chicken and egg. You have some people who have criticised us for investing a not insubstantial amount of money into charge points that are not used very much. You have criticism on one side, and I do not know whether that is the egg or the chicken side but equally criticism on the other is, "Oh crikey, we do not have enough charging points". Therefore people have the range anxiety and these other issues of perhaps this whole idea about take up and that is the egg or the chicken, whichever one we did not use before.

It is not an easy problem to square but we are in the right place that, again using the planning system, there are rules to do with how many charge points you need to put in for new residential development, etc, but equally we have Source London. We have now gone out to tender to this French company, which have a very ambitious plan for scaling up the ultra low emission vehicles in London. I think we probably have it in the right place. The fact that criticism was probably equal on each side suggests perhaps that we have it about right, on that chicken and egg problem that you and I referred to.

Andrew Dismore AM: Can I also ask one or two questions about the London Underground (LU), electricity and decentralised energy? The London Underground is a huge consumer of electricity. It think it uses as much electricity as 500,000 homes. It costs £105 million a year and the bills have been going up as for everybody else. The bills have gone up by 50% since 2008, whilst consumption has gone up by 17%. In the old days TfL used to have its own power stations. Now it has only one left I think in Greenwich. I suppose the questions are what is your energy strategy for TfL? Are we going to see greater use of decentralised energy? What progress has there been? What is going to happen with the Greenwich Power Station? Is it going to be able to provide heat and power from low energy sources? Are we going to see more of them?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): When it comes to TfL - as I said in my opening remarks - it is through the Licence Lite system. When we get that up and running, it would seem the logical consumer for the excess generation capacity from some of these gas engines would be LU, since: (a) we have some influence over it; and (b) it is a huge energy consumer. There may well be benefits when it comes to long-term pricing of that but that again has to work through the system and we do not have the clear business case.

When it comes to Greenwich Power Station that is right it is currently the emergency power for the tube if there is a total grid failure. They run it now and again during the Triad periods to try to offset its costs. It is no secret that TfL did a Prior Information Notice (PIN) last year, was it? Was it last year or two years ago?

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): I think it was late 2012.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): OK, well, 18 months or so ago. It was looking at what technologies they might have to redevelop on that site. It is a huge building with frankly not very much stuff in it, because it used to be a coal-

powered station for the trams, built in 1903 or something, and so we are looking at that to see what possibilities there are to look at some of the new developments that are happening in Greenwich and the peninsular. That is going through the masterplanning phase at the moment and it will be a while until we are in a place to talk very much about what technology might go in there, etc.

Andrew Dismore AM: That is a long way off?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I would not say a long way off. It is a while off.

Andrew Dismore AM: The 2020 Vision of the Mayor said that the Greenwich power station could be the first of many, but it looks as though it is going to be first of one in the immediate future.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): In fairness, the first of many of these sorts of projects across London, not necessarily the first one that TfL runs. All the work that Peter is doing on corralling these heat networks to market is exactly that. Greenwich Power Station, the Mayor envisages in the 2020 Vision to redevelop that site and have a very exciting project of the Mayor leading by example, "This is what we want to see more of in London", but then the market, boroughs, local authorities and community groups or whatever proliferating these sorts of schemes all over London.

Andrew Dismore AM: We will not be seeing more for TfL itself?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): TfL is looking at other CHP engines, other spots around the place, but that kind of large scale thing, you know, TfL's core business is running the train; LU's core business is running the trains but this is an asset.

Andrew Dismore AM: It is going to be cheaper if it generates its own electricity than if it buys it from one of the big commercial companies, isn't it? That ultimately then feeds through in fares.

Don Leiper (Director of New Business, E.ON Energy): It is quite a big risk for them to take as well.

Andrew Dismore AM: You would say that, wouldn't you?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): We have in that power station a pre-existing asset that is ripe to be properly looked at. We are very lucky it is in an area of London that is developing very interesting new projects on the peninsular and also in the heart of Greenwich. You have a real win, win, win situation. When you think about the amount of stuff LU is delivering at the moment, the most comprehensive upgrades and keeping the trains running, is it their core business to start building new power stations around London? That is the question I would put out there. Would people want to be seeing a huge amount of

LU's resource looking at that rather than running the trains and this particular asset that it already owns, and is running, etc, etc.

Andrew Dismore AM: It is not either/or. TfL is doing all sorts of things, using stations more effectively as shops and all that sort of thing, and that is not the core business. The core business, as you say, is running the railway but these are all ancillary to it, generating income or reducing cost, and this is one way of potentially reducing cost. It may not be absolutely core in terms of putting trains on the railway but you need electricity to run the trains. The shops help support the cost of the fares as well. What is the difference?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I think I have broadly answered the question in that through the Licence Lite system we hope that TfL will procure some of its electricity demand from local generators here in London. The work involved in Greenwich is complicated and will take a while. Not as long as you think it might do but we hope to get it done in the next few years.

These projects take a long time to come to market, and I think to tentatively focus on one particular one rather than a proliferation where perhaps nothing gets done rather than a particular real flagship project to prove the case.

Murad Qureshi AM (Chair): OK. Just some loose ends on the transport emissions. Clearly, you have given TfL this lead so when will we see an energy strategy from them? On a cost basis Andrew has pointed out why it is needed. Those figures that Andrew quoted exclude Crossrail and the energy that it may generate. At the same time I have noticed London Underground have built substations, new ones like the one near me on the Edgware Road. Things are being done but, if you are going to give them the lead role with the Licence Lite, an overall picture of where they are going does need to be put in place. For example, the annual environment report does not necessarily mention much on the energy front. Is that something we can see TfL making some efforts corporately?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I would say that on the Licence Lite they are going to be an end user of it. City Hall will still be the lead player in that. I would just make that point.

I would say there is an energy strategy that is formulating within TfL and the business plan talks about certain figures on how much we want to be taken from local generators over a period, which strikes me as a strategy that we have. It is there that perhaps we should sing from the rooftops more about it. There is an energy procurement strategy that they are working through.

Murad Qureshi AM (Chair): Going through TfL is difficult enough as Assembly Members. I suspect it would be pretty difficult for community groups if that is where they have to do their energy projects, and the fact that it is here with the Mayor's office is probably going to be more responsive.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): The Licence Lite will basically come through us. You will not have individual CHP engine owners or community groups, or whoever it might be, talking to TfL. Effectively, they will be talking to us who broker that relationship.

Murad Qureshi AM (Chair): Generally, in the GLA group, recently the Audit Panel talked about the Mayor's Office for Policing and Crime (MOPAC) not having a strategy generally for decentralised energy. There are basically things that can be done within the GLA but better than they are at the moment. I just want to be reassured that the Mayor's office is on top of that and making sure that the various arms of the GLA group are doing what they are asked. For example, the Audit Panel recommended to MOPAC that they have a decentralised energy policy whilst they are losing their estates, and I wonder whether, Peter, you can inform us where they are on that?

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): We are not doing any work directly with MOPAC. We provide support to people who come forward and ask for our support, and if the project looks big enough and there is enough interest there we will carry it forward but in my programme of work they are not one of the stakeholders I am involved with.

Murad Qureshi AM (Chair): Can I just quote to you on MOPAC

*"At a recent meeting the Audit Committee highlighted the need for project sponsors to formally report on expected CO₂ emission savings following completion of a project."*²

That is something which would be useful if you could follow up, if that is not too arduous a task to take on.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Chair, can I just say to reassure the Committee that we have lots of conversations with our functional bodies on having a co-ordinated energy strategy, and it is one of the roles the Mayor asked me to do this time last year when my role changed, so we are on top of that.

Murad Qureshi AM (Chair): OK. I will just have to accept that.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): We will take up the MOPAC conversation.

Murad Qureshi AM (Chair): Yes, that is one of the things that have already come through another Committee and I think it is useful to pick it up here.

² After the meeting, it was clarified that this report referred to an internal audit undertaken by MOPAC's Director of Audit, Risk and Assurance which looked at how the GLA had implemented its Energy and Environment Strategy Framework, including the Decentralised Energy programme. This report was reported to the Audit Panel's meeting on 20 March 2014 and can be found here: www.london.gov.uk/mayor-assembly/london-assembly/audit-panel

James Cleverly AM: Can I ask I suppose Matthew about what progress the Mayor has made of taking both carbon and other emissions out of workplace energy generation?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): On the retrofitting side I think you had quite a detailed session with my colleague, Ric Blakeway (Deputy Mayor for Housing, Land and Property). We have had quite a success in fact at workplaces. The RE:FIT model has delivered we think at scale, so much so that DECC is planning to roll that out across the country. I do not want to go over the material that you went through with Richard. That is, the direct retrofit side on workplace specifically has been quite a success. Again, on the planning we have been delivering the carbon targets that are referred to well in excess of our own targets. Our target was 25% above the building codes and we have been achieving 33% to 36% above the building codes in reducing carbon emissions from new build.

James Cleverly AM: What impact do you think is likely to be felt from, hopefully, the fact we are now moving out of quite an extended period of economic downturn? If we see an increase in overall economic activity, how is that going to affect our ability to maintain the good news about carbon emissions from businesses?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): If you look at some of the figures, the amount of carbon mitigation we saw from new build was lower than we had expected when the strategy was written. That was largely because the construction industry ceased for a few years. Now, looking out the window behind all of you, we see the sky is littered with cranes. All these new developments – certainly the ones that go through us and go through my team as they go through planning – there is discussion and negotiations as you would expect with a scheme. We do not want to kill them off but we want to ensure that they meet our carbon target and generally exceed our carbon targets.

When you think about the demographic growth you are seeing here in London, we are going to need a hell of a lot of development and we need to ensure that that development is low and moving to zero carbon over time. That is not only a carbon mitigation thing, which addresses climate change, but also it is clearly a resource efficiency thing. When you see what is going on with commodity prices, no matter what we do they are likely to increase. As more of the world develops and we have billions of world citizens aspiring to a lifestyle more like our own, commodity prices are going to go up. In order to remain competitive this country has to ensure that its new infrastructure, its new development, is as low carbon and with resource efficiency as it possibly can be, so we do not have to go back and retrofit it all, which is largely what we are doing to our estate at the moment.

James Cleverly AM: OK. Moving away from the big ticket players, where you have big developments and that kind of stuff, obviously a massive amount of carbon fuel consumption is done by the small business sector. What work can be done to specifically focus on that because obviously, just like in the domestic sector, it is a very, very large number of quite small consumers but the collective impact is quite significant?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): They are often the most difficult players because they are very small businesses and they are perhaps 100%

focused on making ends meet and keeping going, rather than the wider strategic issues. We do have some energy efficient retrofit pilots for Small and Medium-sized Enterprises (SMEs). There is one for theatres that we are currently doing. We are also looking at SME business on industrial estates. We are starting those conversations to engage smaller businesses to show them how energy efficiency will help their bottom line, which I think has to be the driver when it comes to engaging these sorts of people. We are moving forward into that smaller commercial sector.

We will also be engaging with - this is not the SMEs - the large-scale commercial players in London to set them challenges, in line with our own carbon mitigation strategy, so they can lower the carbon intensity of their own businesses.

We are already seeing a lot of companies who see what is happening with commodity prices, so in the last ten years we have seen 100 years of progress of commodity price decrease wiped out, and we are going to see that increase faster. You are seeing very big corporations, such as Marks & Spencer and their plan A, Kingfisher and its Net Positive scheme, or Unilever who want to double the size of its business but substantially reduce its environmental impact. They can see what is happening. They can see that the commodities prices are making their bottle of shampoo go up and up and up. In order to remain competitive they are going to have to reduce the amount of resources and, therefore, carbon that they use.

Interestingly, you are seeing now that the market has seen what is happening and it has to address it in order to make sure that their businesses are sustainable long term.

James Cleverly AM: Can I invite anyone with the questions I have just asked, that have any comments or responses to what Matthew said or not?

Reg Platt (Senior Research Fellow, IPPR): I will give one reflection. It is not something I can talk about in too much detail, but specifically on the issue of SMEs. We are currently just getting going on a piece of work into how we drive energy efficiency into the commercial sector. The Green Deal is obviously a very problematic programme for the residential sector at the moment, but there was supposed to be launched a Green Deal scheme for SMEs at the same time as the residential scheme, and it does not currently exist.

The Green Deal Finance Company (GDFC) does not have the capabilities to offer any finance to SMEs, as was expected by this time. If there is one observation that the GLA might want to pick up a conversation there, they might want to talk to DECC and say, "Where is this financing help?" Because obviously one key barrier to energy efficiency retrofitting for all these types of companies is finance.

Don Leiper (Director of New Business, E.ON Energy): I would add a couple of points on that. Energy efficiency work, be it the Green Deal more recently or just generally targeted at both energy companies and others to do has been focused on residential, and an awful lot of the low hanging fruit in the residential space has been taken and the guns of that have not yet been trained on to small businesses premises. If you are thinking of trying to lobby for that kind of thing, in terms of how future energy targets at national level were considered, then you

should perhaps try to incorporate the SME sector into those kinds of energy efficiency targets. Because there are plenty of small business premises where money that is currently being spent on residential, which is also a good thing but if you are looking at bang for the buck, from a carbon perspective, can be well targeted at small business premises for the future.

James Cleverly AM: Are you suggesting that we are moving on to some of the less easy wins in the domestic sector and missing out on easier wins in the small business sector?

Don Leiper (Director of New Business, E.ON Energy): That is exactly what I am suggesting, yes. I also believe you have a generic issue in London, in that at least for us energy companies who have these obligations to make energy efficiency measures delivered across the country, where we effectively compete with each other to get to our targets at the lowest possible cost. You have a problem in London because delivering energy efficiency measures in London, and indeed solar PV to roofs in London, is more expensive than anywhere else just because of the logistics of working in London and the costs and the price of working in London. Therefore, if we are trying to be cost efficient in what we do, we do not come to London.

The point about Feed-in Tariffs (FITs) being paid on everybody's bills, you are paying for it in London and other people are getting the benefit, is exactly the same for energy efficiency.

Murad Qureshi AM (Chair): That is not a new perspective and we have heard that when we have dealt with domestic retrofitting, but are you saying that it would be easier to develop in London energy efficiency programmes aimed at business rather than homes?

Don Leiper (Director of New Business, E.ON Energy): No, I am saying that both businesses and homes would be probably harder to do in London and more expensive in London than anywhere else, but I think there is still low hanging fruit in the SME sector and small commercial buildings than necessarily is the case in residential now.

Reg Platt (Senior Research Fellow, IPPR): On the subject of retrofitting, I would take the opportunity to draw attention to a report we published at the end of last year on a new delivery approach for primarily residential energy efficiency that could also take in the SME sector. We have garnered a lot of support for that because we have developed an approach that is far more cost effective at getting to fuel poor homes. Critically, we would put power in the hands of local delivery bodies and move it away from the energy companies, so it may be something that the Committee is interested in.

Murad Qureshi AM (Chair): Our previous session was solely on retrofitting.

Reg Platt (Senior Research Fellow, IPPR): I know, I understand.

Murad Qureshi AM (Chair): We do know that about 40% of the carbon emissions are there and 30% with transport and business. We will follow that logically and we will take that on board as well when we do our scorecard report on this.

Stephen Knight AM (Deputy Chair): Of course, one of the frustrations is that the figures we have for carbon emissions are several years out of date. We have figures in the report that you have just published up until 2011, which seem to suggest that we are down on the 1990 baseline by about 11% and the targets in your strategies for a 20% cut by 2015, which is obviously only a year away. Therefore, the real question is: are we going to meet that target? It appears almost inconceivable, unless those 2011 figures have been improved upon dramatically in the last couple of years. I do not know whether anybody could answer whether they have any more up to date information about carbon emissions that would suggest that they have been dramatically improved upon in the last couple of years. Matthew, do you want to start?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Yes. I would say that obviously you are right about it being frustrating, in that these figures are coming up to three years out of date. In the context of London's population growth and economic robustness, our progress towards our target 60% by 2025 or in this case 20% by 2015, is actually pretty good. As you say, CO₂ emissions are down 11% from the 1990 baseline or 14% since the current Mayor was elected. When you think that there are 600,000 more people. When you think there will be another million by 2021 or 10 million by 2030, the figures are quite heartening because we have had another three years of activity where some of these projects have ticked up. Think about some of the refit work that we have referred to. There has been a lot of activity between 2011 and now 2014 and looking forward to 2015.

Stephen Knight AM (Deputy Chair): Are you confident on the basis of that activity that when we get the 2015 figures we will have hit the target?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): The target is extremely challenging and I cannot say here, right now, a year before the actual date and probably three or four years before the data comes through that we will have definitely hit the target.

Stephen Knight AM (Deputy Chair): I question how challenging they are compared with the 60% reduction target you have in ten years' time, which is 2025. That is rather more challenging than the 20% reduction, isn't it?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I would say that the targets are very challenging, and they become all the more challenging when you think about the fact that when this stuff was written we did not know that 600,000 more people would become Londoners in six years. We did not realise that the population of London was going to hit 10 million in 2030. A medium trajectory suggests that we were going to have 11 million people in 2050. The targets are always challenging when they are written and it is good to have challenging targets. If you met them too easily by miles then we did not push ourselves. The targets have become all the more challenging by the fact there are so many more people here living in London. I am quite heartened that we have had quite a substantial reduction since the Mayor was elected of 14%. That is when just as the projects are beginning to tick up. We actually produce per capita the lowest CO₂ by some distance in the UK. The UK in general is 6.9 tonnes CO₂ per year and in London it is 4.89 tonnes of CO₂, which is 70%. When you consider we are by far the richest region in the UK it does show you that we have managed to

disconnect carbon emissions from population and economic growth, and I think it is all quite heartening.

Stephen Knight AM (Deputy Chair): What proportion of that reduction that we saw particularly in 2009 – we bounced back a bit in 2010, looking at your graphs – is associated with the economic downturn, which must have had a big impact? I notice in particular, when you see a breakdown of the carbon reduction between homes, workplace and transport it is workplaces that have seen the biggest reduction, 14% compared with 9% transport and 10% homes. A lot of that reduction seems to be in workplaces, and of course we have had a big recession. That arguably has been part of the issue in terms of reduction. Of course, as the recession ends and we move into growth, there is a danger there that emissions will increase.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): It is a very good question to ask about how much did the economic downturn, recession, affect the CO₂ emissions here in London. It is worth noting that London weathered the economic storm relatively robustly, compared to the rest of the UK which I think suffered really very badly in the great crash, the great bust.

Stephen Knight AM (Deputy Chair): Have we seen a proportionally better carbon reduction than the rest of the UK during that period?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I do not have those figures to hand. I will have to get back to you on that. It is the same with the waste arisings. Waste arisings have dropped amazingly since the Mayor was elected six years ago. I referred to that the last time I was before you. It will be interesting to note, now the economy is rebounding, how much does that waste stream increase? I like to think that because of some of the things I have already talked about to do with large companies already reducing the amount of waste they create, and because of the economic drivers that are driving down that path, that you will not see that rebound effect that you are referring to as marked as one might otherwise think. What you might see, of course, is if the recession carries on, which nobody wants, carbon emissions reduce faster but I do not think you are going to see an increase.

Stephen Knight AM (Deputy Chair): In terms of the relative balance between carbon emissions from homes, workplaces and transport, I referred to your figures earlier that showed we have seen a 14% reduction in workplaces, 10% in homes and only 9% in transport. Are there particular areas where you need to do a lot more? You are supposed to be hitting 20% in all of these areas in a year's time, so you are a long way off. Particularly in homes, in transport you are a long way off.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Going into transport I think some of the difficulty there is that – and we are working with TfL to sort this out – they have not been measuring in a consistent way the impact of the policies of what people have been doing. We do not really know how much carbon mitigation there has been in the transport sector as we ought to. We are working hard with TfL to address that problem. We are helping with their internal work on that.

Stephen Knight AM (Deputy Chair): You are saying that, despite the figures being three years old, they are still not robust?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): All these sorts of figures are getting more robust over time, all this data. You see, for example, that the London Energy and Greenhouse Gas Inventory (LEGGI) data and the London Atmospheric Emissions Inventory (LAEI) data does not quite match up. That is another one that we are working together very hard to make sure that it is more robust. This is a relatively new part of the statistical analysis that we were talking about. It is going to get better over time. We need to be realistic about how absolutely robust some of the data is, but you can see a broad picture of the reductions.

On transport again, when you think about the population increase - and I know there have been discussions, for example, in the Assembly on the bus routes and the over-crowding of buses or, equally, with the fact we need to have more tubes going down the tunnels in order to move people around - you have more people wanting to travel, so clearly the carbon mitigation is more of a challenge than you would otherwise have thought. We have seen, for example, some of the upgrades, regenerative braking going on to the Victoria line trains to reduce the amount of energy that they use. I know that when we go to procurement for the next generation of new tubes - some of the deep lines that I think TfL announced in the last few weeks - some energy efficiency measures in those trains will be quite important.

Jenny Jones AM: I am concerned because you said earlier that the CHP stuff that you are doing is going to be carbon neutral, which is great obviously, but if you are going to achieve these targets it cannot be carbon neutral. It has to be carbon negative. You have to go harder and faster if you are going to get to these targets. For example, encouraging people to install PV. Is that a lever that you might use rather faster than you planned, the whole idea of photovoltaics on domestic properties?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): When it comes to heat networks I said air quality neutral they certainly are not carbon neutral.

Jenny Jones AM: Sorry, I misunderstood you. I thought you said they were going to be carbon neutral. No?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): They will reduce the carbon consumption. If you have a heat network, you are efficiently using what is in the big power stations the waste heat that disappears up the chimney. In a heat network you are displacing gas boilers. For that unit of carbon that you burn in a gas fired CHP it becomes a lot more carbon neutral than we will have at the moment.

Jenny Jones AM: Sorry, yes.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): It was in answer to Stephen's question about air quality. I said air quality neutral and the impacts that CHP may have.

Jenny Jones AM: What about the PV idea then?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): When it comes to PV we are somewhat reliant on the Government incentive schemes with the feed-in tariffs to deliver those at scale. Again, I am sorry to repeat my answer when it comes to the planning system, in that we have a lot of renewables going in - like the PVs on our own roof - to penetrate that across London.

It is worth mentioning that some of the difficulties in London, when it comes to PVs, is that a large part of the city are conservation areas where planning authorities are not happiest about people putting PVs on their roof. When you take the suburban trains through London you do not see the huge numbers of PVs on the roof that you see when you go to other parts of the country. That is true. It is a point that is well made, but there are difficulties here when it comes to some of the conservation areas that we have here in the capital.

Murad Qureshi AM (Chair): The important thing there is if people did put a PV up on their roof most people will not see them anyway in the conservation areas. It is the nature of the --

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): Of the planning.

Murad Qureshi AM (Chair): Yes. That point has to be made at the local authority level rather than here probably.

We are coming towards the end now and this is a final collective question, although there may be one specific point depending on your responses. I will go to the GLA first before I go to the rest of our panel.

Given the existing mayoral policies, what are the specific barriers to implementation, given the present targets? Matthew, could you name the three biggest barriers to delivery of the Mayor's policies at the moment.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): On the heat network one specifically. We have spent a lot of time talking about that. It is more of a cultural barrier I would say than a policy barrier as such, in that we want to develop heat networks that are new to the UK. They are not new to Nordic countries but they are new to here and you have to overcome some cultural prejudice I suppose - whatever the right term should be - when you have people who have been building in this country for decades, to bring in a new idea and I think that is where Peter's work is so valuable in organising these people. That is one.

Some of it is also uncertainty about what is going on so it is very important that the Government, now that the Energy Company Obligation (ECO) consultation has come to an end, comes to a conclusion about where that is going, so we have some sort of certainty. It is a good thing that it is 2017 now for the ECO on the RE:NEW programme, but we need to have some sort of certainty so that we know what we are doing over the next three years. We need the Government to have a stable policy and I suppose also, cognisant of the fact that we are

approaching a general election and the energy policy has entered that debate, that it is not terribly constructive when it becomes an unbelievable punching bag - whatever the right phrase is - between all the political parties. There does need to be some sort of responsibility, in that this is a long-term problem we are facing. We have an energy capacity gap and it is quite important there is consistency, as much as is possible, in the wider energy policy across the country. I think that is a barrier when it comes to what the cost of capital suddenly becomes for some of these big schemes, not necessarily in London but certainly wider on the national stage.

Murad Qureshi AM (Chair): Can I conclude that you are saying there is a culture barrier, uncertainty in Government policy, particularly, potentially on energy policy coming towards the next general election.

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): A lot of that is because we have a big P for party politics. It has become a punching bag and people are throwing things at each other. That makes it quite difficult for those who are trying to deliver at scale in this sector.

Murad Qureshi AM (Chair): OK, noted.

Jenny Jones AM: It is our fault and not his fault. Wow, that is an interesting way of putting it.

Murad Qureshi AM (Chair): OK. I am trying to be neutral as a chair here, Jenny. Afsheen, what would you consider to be the three major barriers?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): I would say I think we need to have more collaboration. We have limited resources and all the different sectors should be coming together, pooling their resources together to make a meaningful impact and I think we have to have a shared vision. At the moment it feels like everyone is driving forward on their own kind of trajectory and they have their own drivers. I think we need to bring them together. That is going to be challenging bringing the different local authorities, national Government policy, communities together on the same path.

Murad Qureshi AM (Chair): Therefore, bureaucracy needs to be streamlined considerably to make community energy a feasible option?

Afsheen Kabir Rashid (Co-Founder Director of Repowering London, Chair of Brixton Energy): Yes.

Don Leiper (Director of New Business, E.ON Energy): A few points. You should be continuing to push central Government hard to make sure they do not take the rug out from under your feet about local planning capabilities. Even though there are some encouraging noises at the moment, I think there is still a risk with the election coming that the overarching planning regime could stop you from putting additional targets on to new build.

I made the point earlier about procurement and retrofit and presumption to connect. I think that is an important one for making more efficiency. These are big, expensive animals that we are putting in for heat networks. We should make the most of them collectively and joining them up probably in the future as well.

I think there is another point that has not been raised at all today. You talked about various energy from waste plants that could heat and power 500,000 homes?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): 260,000 homes from existing four big ones that we have.

Don Leiper (Director of New Business, E.ON Energy): Yes, but I think it is interesting to observe that the financial support to waste plants is not as strong from central policy as it is to, for example, biomass plants. The amount of Renewable Heat Incentive (RHI) or Contract for Difference value you can get for just using the waste heat from energy from waste plants is not as big as in my opinion it should be, which would then enable these schemes to support the expensive construction of heat networks to attach to those energy from waste plants. We should be lobbying to increase the RHI to a greater level than it currently is for energy from waste plants, not just for London but on a national basis. Otherwise it is really difficult to do the schemes. I think you said it took 20 years to get one of them up and running. That is because it is very expensive and you have to have a lot of local commitment to these things. If you can get some more support from RHI into those schemes I think you will find them a lot easier to deliver.

Then the final one I think you need to try to find a way of getting pull from the people who own the buildings. A lot of what we talked about is push. We need to find a way of getting pull from the people who own the buildings, and that may involve more sanctions and/or incentives at an individual property owner level than we have at the moment, be it through stamp duty incentives or council tax incentives or disincentives for having certain levels of energy efficiency in your own building.

Murad Qureshi AM (Chair): Coming back to the housing market, Reg.

Reg Platt (Senior Research Fellow, IPPR): I think mainly just to reiterate a few of my points. The solar issue has come up a number of times. If there is a cost disadvantage to installing solar in London, which makes sense because of the density of buildings here, then that is something that there should be a conversation with national Government about or there needs to be something specific that the GLA might try to do. Whether it is a top up or something else that will need to be thought about.

Again, to reiterate from earlier, I think the Licence Lite move is definitely to be welcomed and very interesting. We will watch this space with interest. I think there is an opportunity to go further, for municipal authorities to become very active players in the energy market possibly acting as active suppliers to domestic and residential customers. That gives you an opportunity then to procure distributed energy from your area.

Within that, we are going to be doing some research looking at are there national regulatory policy barriers to decentralised energy more generally. There should be coherent lobbying on national Government if that is the case. For example, we are interested in the opportunity to give preferential grid access for renewable projects which have some kind of community stake in them. It would be a different way of encouraging developers to get community money and so on.

Murad Qureshi AM (Chair): OK. Thank you. That is very useful. I would like to add my one that I think we need to look at. It does have relevance right now. I think Scotland has a lot of renewable energy that we need transmitted down to us in the south, and that has not really been broached in the independence debate. Perhaps there will be an opportunity to do that.

Stephen Knight AM (Deputy Chair): There were reports in the weekend press about a new technology being introduced in a scheme in Kingston where they are pumping heat out of the river, so water source heat pumps. Of course, London has this huge river flowing through us that is a huge heat reservoir. There must be a huge potential for this kind of scheme. I think this one was reported as heating 150 homes and 140 room hotels. It is quite a big scheme and we have a huge river so there must be huge potential for more schemes like this. Is the Mayor going to be promoting this? I do not know whether the Mayor is currently finding any schemes like that?

Matthew Pencharz (Senior Advisor, Environment and Energy, GLA): I would just say that we are looking at it. I think Peter is dying to say something but we are looking into exactly that.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): Just to add to that we produced a report in July last year. It is entitled *London Zero Carbon Energy Resource*. It is to do with low-grade heat that people throw away, the energy that is in our air source heat pump and in our water courses, sewage systems and things like that. From memory, I think it concluded that it has the potential to supply something like 38% of London's heating requirements. It does involve the use of heat pumps. You have to be very careful about the temperature that you take to ensure that you maintain the economics and the carbon benefits. As the grid decarbonises that will just get further reinforced.

That is our piece of research work. It is very exciting because it is informing our energy masterplans and the projects that we are looking at. The pilot is the phase 2 at Bunhill in Islington, taking heat out of the underground and the electricity primary substation that Matthew referred to earlier. I think this is really exciting stuff for us and we are trying to get our thinking and our strategies around how we deploy this at scale, but we do need heat networks to enable us to do that at scale. I think that marks the medium to long-term approach to what we are trying to do here in London.

Stephen Knight AM (Deputy Chair): That sounds very interesting. I wonder if we could have a copy of that report and we will circulate it.

Peter North (Senior Manager Programme Delivery, Sustainable Energy, GLA): Yes.

Stephen Knight AM (Deputy Chair): Thank you.

Murad Qureshi AM (Chair): Thank you for your views and opinions this morning. It is most useful in us coming to a view of where we are with the Mayor's carbon reduction and energy policies. I trust we will keep in touch, because there are still many initiatives that are still to happen and I know the Assembly Members here are grateful to yourselves for making the time this morning during your busy, busy activities. Many thanks again. Much appreciated.