

**Policy Platform: energy markets, heat networks and London
Thursday 19 January 2017**

Minutes

Attendees

First name	Last name	Organisation
Jacob	Adekunle	Redbridge
Saeed	Atlas	Harrow
Joseph	Benson	LASER
David	Carlyon	Hounslow
Paul	Collison	Southwark
Dion	De Silva	Surrey
David	Esdaille	Tower Hamlets
Bob	Fiddik	Croydon
Harold	Garner	Camden
Cherie	Gregoire	MLEI / Cambridgeshire
Gonzalo	Jimenez	Kensington & Chelsea
Beata	King	Transport For London
Andras	Kis	Waltham Forest
Andrea	Latter	Enfield
Jessica	Lewis	London Environment Directors Network
Lucy	Longstaff	BEIS
Lucy	Mcquillan	Hammersmith & Fulham
Andy	Morgan	LASER
Peter	North	GLA
Lucy	Padfield	Islington
Shadia	Rahman	Kingston
Anis	Robinson	
Shirley	Rodrigues	GLA
Tim	Starley-Grainger	Westminster
Peter	Thrift	Sutton
Liz	Warren	SE ² (secretariat)
Risa	Wilkinson	Ealing
Motoko	Yamane	London Energy Project

Apologies

First name	Last name	Organisation
Paul	Hasley	Surrey CC
Tim	Starley-Grainger	Westminster
Gerry	Kelly	Amey
David	Bell	Merton

Andrew	Stokes	Merton
Harold	Garner	Camden

1. Welcome and introductions

Bob Fiddik, LB Croydon and LBEG Chair

Bob Fiddik welcomed everyone to the meeting and thanked the GLA for hosting.

2. Update from the Mayor of London

Shirley Rodrigues, Deputy Mayor for Environment and Energy

2.1 I'm here to talk about the Mayor's manifesto commitments and find out from you what your priorities are, to help implement a couple of key commitments. One is the commitment to be zero carbon by 2050 – we're doing some modelling on that at the moment. The other is the development of Energy for Londoners. At the moment, this is an umbrella brand for a lot of activities around energy – some familiar, some new. The familiar things will be DEPDU, RENEW, REFIT. We're looking to develop a Fuel Poverty Action Plan, a Solar Action Plan, and a not-for profit energy company. We are trying to understand what route we should go down – for example, white label or a full energy supply company – and what each involves, particularly in a volatile energy market.

2.2 There are some key ambitions for the Mayor - how do we tackle fuel poverty and how do we reduce emissions? Is it possible to design a programme which does both? If not, how do we create programmes that align to do these things?

2.3 We're also working on the new London Plan, at the spatial development level. We have the zero carbon homes policy and we've seen rapid take-up by some Boroughs (but not all – we want to know why Boroughs aren't taking it up). We're also looking at following on from the London Infrastructure Plan, looking at growth and the role that heat networks can play, particularly in housing zones and opportunity zones. From the transport side, we're looking at electrification, which obviously has an impact on energy supply. Retrofitting our homes is important, but so is retrofitting commercial buildings.

2.4 We have very good working relationships with the Boroughs and we absolutely need to be working together on this. We're interested in what issues you would like to flag up for our policy development, and on what you would like our role to be.

Q1: Are you looking to phase out standby generators?

A1: We're not looking at phasing them out – but they're not in favour because they're run on diesel, so emissions are high and air quality issues are high. There are also peaking issues. They run contrary to our policies on air quality. We'd be open to talking to new, cleaner technology companies though. We try and impose standards through the Low Emission Zone for construction equipment.

Q2: On heat networks: we have projects to set up heat networks. Complexity comes from having multiple sites and multiple developers and getting those anchor customers signed up to be at the heart of the scheme. We would like more drive, at least for public sector customers, to have to look at heat networks.

A2: We do provide support, and we have some examples of how we've been bringing private sector developers together. But it does really depend on the Boroughs. Mandating anything is very difficult. We try and construct the business case. The

HNIP opportunity to get funding in advance can help too. It's the risk aspects we try to address.

Discussion:

Comment 1: There's also often a black hole in funding – HNIP can help but it is time limited. Zero carbon offset funds can help, but there are legal issues around spending S106 money on infrastructure. To get to where we need to, there's still a big gap in terms of retrofit budgets.

Comment 2: There are two ways of funding infrastructure. There's the Community Infrastructure Levy, but there's not enough money in those funds. When you're looking at infrastructure requirements in terms of schools and roads – the funding requirement is so high but there's always a gap from CIL. When it comes to S106, there are legal rules about pooling – you can't use collections from several developments to build infrastructure. You have to use money from development to offset the impacts of those developments.

Show of hands: four local authorities in the room were already raising money through carbon offset funds.

Comment 3 (Croydon): Anything we're raising through S106, we're going to use for retrofitting and fuel poverty. There's a limit to the funding so we're going to target it to the people who most need it.

Comment 4 (Westminster): We also face issues on retrofit regarding complexity: ownership, conservation areas, leases.

Shirley Rodrigues: A back of the envelope calculation: we need to retrofit 100,000 homes per year to meet our goals. We don't have the finance for that, and Brexit will mean that EU funding will dry up. We're looking at how we can mobilise more funding from the City into London. As we design programmes, we can't design things that will deal with every local issue, but there are common issues that Boroughs will face – is there something that we can do at a London level or is it something where we should be lobbying Government to change? On the Zero Carbon Homes target: how can we encourage Boroughs who don't have a fund to set one up, and how can we support them? Can we look at pooling the ZCH funds across Boroughs? If the cost of carbon is better one way, should we be looking at that? I'd imagine quite a few Boroughs would say "hands off" but as the GLA we want to see if a more strategic approach can be more beneficial for all.

Comment 5 (Southwark): We need to renew the vast amount of communal heating networks we have in the Borough – the Council wants to access HNIP funding, but it feels like you need to know where you're going to deploy the funding. You need to have a project to get the funding.

Shirley Rodrigues: Part of the modelling and design work we're doing: where should we be working? What are the big opportunities? Where is it practical to work? Part of the problem is that changes in the national policy context are putting pressures on funding – this is true for Boroughs, housing associations and others. We want to understand the pressures and adjust the interventions that we might be able to help with, but also to take these things back to Government. If there are things that are inhibiting progress, it would be great if you could feed that back to us. The document *A City for All Londoners* included a high level exposition of the Mayor's views of where London ought to be; the zero carbon and Energy For Londoners programmes are right up there. On solar, we've started to map solar potential in London: is this something that you're doing in Boroughs?

Comment 6 (Croydon): We've adopted the REFIT scheme in the past – our priority has been securing a package of energy efficiency measures for carbon reduction with solar as the icing on the cake. Energy efficiency does better than solar in £ per tonne of carbon. The disappearance of FIT makes this even more so. So it's always been part of a package.

Comment 7 (H&F): We have a lot of problems with planning for PV, particularly in conservation areas. Planners won't let you have panels if you can see them from the street. We tried on schools but we couldn't have them even if the school itself is not a heritage building. We have the same problem with double glazing.

Comment 8 (Kingston): We do a lot of extensions for schools so PV goes on new build, but there's no real mechanism to retrofit on the existing buildings, and it's difficult for us to do a rollout because we don't have the relationship with schools. It's difficult to get data from them – they don't get their energy from us any more.

Comment 9 (Southwark): We have the same issue. Schools are no longer in the CRC so they're no longer our main priority. And unless we can fully fund up front, schools won't take it on because of their financing. And what if the school wants to become an Academy?

Shirley Rodrigues: If we're going to decarbonise, it requires every sector to decarbonise. But you might start with a different set of phases.

Comment 10 (Croydon): As far as REFIT is concerned, we're running out of operational buildings to work on. We're reducing our estate. The biggest prize in our Borough is now the schools. It's a challenge for us as energy managers – schools used to buy energy from us. Now we have to be more commercialised in how we offer services to schools. Even with academy chains, they don't have the funds to make changes, or the expertise to do retrofit. The Council is quite prepared to borrow money via PWLB and to have a service agreement with schools. Some Councils don't want to do that but it's one of the approaches that we have to get smarter about it.

Comment 11 (John Spring, REFIT): Schools is a huge area – we've touched about 10% of schools in London. Every school is different; some schools work in groups. Some Boroughs are providing the finance; others are finding it more tricky. The Academies process does make it tricky. Maintenance backlog issues in schools are huge.

Comment 12 (Croydon): Often schools are missing basic statutory compliance because they don't know that they have taken on those responsibilities when they became Academies. So you can tie the energy side into a wider discussion about compliance.

Shirley Rodrigues: Maybe we could think about a session on understanding the issues around schools – how have people made it work?

Comment 12 (REFIT): Schools can feel under siege – delivering the curriculum, managing demographics. The last thing on their minds is saving energy. For REFIT, we could extend the savings period to release funding so that schools can do other things with it. You can use energy as an indirect way to release funding.

Comment 13 (Southwark): Our schools programmes are very much about saving money – the Children's Services Department took a decision that we would match fund but not fully fund measures. The schools has to want to do it.

Shirley Rodrigues: It's about understanding the business case and that there are benefits. Are there opportunities to do a more whole school approach? Can the GLA draw things to people's attention and help with learning?

Comment 14: One challenge is that there is often no link between the people creating sustainability policy and the people who have to deliver. The people who are pragmatic and who have to deal with it: no one talks to them. Most of the people here are energy managers and don't get involved with policy people but who are told "just do it".

Shirley Rodrigues: I think we're aware that saying "just do it" isn't going to work. If there are other people in local authorities who have barriers, we want to know what they are. If there are any other issues, please send us an email – we want to know! We're creating strategies which will exist for a number of years so this is the time to be feeding things in.

Comment 15 (Makoto Yamane, London Energy Project): We work with 35 public authorities – we do aggregated procurement of energy for the corporate side and for schools. We are doing market testing for how we can effectively with the corporate side.

3. Peter North, Energy for Londoners

(see slides)

- 3.1 Energy for Londoners is the umbrella brand for the Mayor's energy initiatives. One of the issues it will look at is low carbon heat, and we're talking to planners about the quality of energy and fuels and what types of systems are best used for buildings heat. Gas is a high quality fuel which may be better used elsewhere, with other technologies such as heat pumps taking on more of a role in buildings, but this has implications for the electricity network.
- 3.2 An energy supply licence comes with significant investment and risk – the Mayor is very interested in this and we're commissioning consultants to look at the options. The Boroughs are very important in this and we'd like to work collaboratively with you on this.
- 3.3 The REFIT framework is in place until mid-2019. We are looking at a new programme for RENEW and how we fund it, possibly with a focus on social housing. Debra Leveson or James Hardy would be able to provide more on this. A Fuel Poverty Action Plan is due to be published in Spring this year.
- 3.4 The Mayor is interested in solar and particularly with a community energy context, helping communities to invest in energy production. And our smart team is interested in smart meters but also demand side response – giving Londoners the benefit of the National Grid demand side ancillary services.
- 3.5 On decentralised energy: DEPDU had a target to bring £60m of projects to market; we brought something like £100m. Some have been built and are operating; some are still in procurement; some need further work to bring forward. We applied to EDRF and were successful, match funded by the Mayor. The programme will run until the end of September 2019. We wanted to build more capacity in the sector, so we will open it out – we've gone through a procurement process to set up a framework, covering strategic work, engineering, finance and commercial, and legal. We're just completing the evaluation of the tender responses across all four lots. We've been talking to a number of Boroughs to help develop specifications for energy masterplanning and feasibility, but we need some comfort from the Boroughs that you will deliver something by September 2019 which will deliver carbon reductions or renewable energy capacity (we need to demonstrate that savings will happen, even if they haven't happened by then). We recognise that the planning activities will pay dividend in the longer term but we do need to get some projects over the line.
- 3.6 The framework is between GLA and the consultants and is available to all public bodies in England and Wales. There's a call off letter so you can liaise directly with consultants on the framework. CVs that were submitted through the process should be the only ones who are used in your projects, particularly in the legal framework.
- 3.7 The second schedule in the call off (tripartite call off) is where the GLA agree to fund services. The Borough certifies that the work is complete and the GLA will then pay the consultant directly. Boroughs would run that call off, so it's not going through the GLA, but we pay for it. We would want to jointly develop the specification so that it's

consistent with London-wide requirements; we'd also like to be involved in some of the outputs but you have full ownership of it.

- 3.8 Lastly, there's a support agreement, which covers the obligations between the GLA and the Borough.
- 3.9 The framework and service should be up and running in 3-4 weeks' time, and we need a name!
- 3.10 On renewables, London has limited renewable resource; we will offer some renewables support, probably around PV, but not attached to buildings. Perhaps 0.5-1MW solar arrays on derelict land or on huge facilities – that's the scale of renewables we're interested in. Smaller PVs are more for REFIT or RENEW.
- 3.11 Licence Lite is a junior electricity supply licence – we want to buy electricity from local generators and sell it on, most likely to TfL. It gives the generator better income for their electricity supply rather than wholesaling it. We now have a framework of generators in place for phase 1 and are launching a mini competition shortly for an offer of prices for power. Hopefully we will be operational from April this year, so long as the mini competition validates the business case. We're interested in talking to you about your generators, and also in whether you'd like to buy any electricity back.

Q1: Is there any particular size of development that you'd like to engage with?

A1: If it's just within supply of a building, then that wouldn't fit. If it's multiple buildings and in different ownership, that's our domain.

Q2: We've got a district heating project around a housing zone which is mostly council led, but with a college and a private developer. How would I introduce you?

A2: We would usually look for a lead party – I'd be here to support you with you providing the leadership. If we can bring everyone together under some sort of cooperation agreement, then we can develop a work programme for that. We would look for those parties to come together under an MOU with senior signatories instructing officers to take actions. It needs the senior buy in for projects to happen.

Q3: Are hospitals and healthcare under the same programme?

A3: Yes. Hospitals are a brilliant heat load; they have the right characteristics, but can often be isolated institutionally. It's not an engineering issue, it's an organisational one.

4. Energy markets and procurement, Joe Benson, LASER (see slides)

- 4.1 It's been an interesting period in the energy markets in the last couple of years with huge and unprecedented changes in direction. Since 2014, we have seen a dramatic fall in market prices, until Spring 2016 when prices started to go up again. Also, coal has been much less of a factor in UK electricity generation; we have even seen the first days with no electricity generated from coal since before 1900. However, our generation capacity is less reliable now and more volatile, and we've seen in a rise in gas generation so there is greater strain on the gas networks. This trend likely to continue – with gas and power markets becoming more intrinsically linked in terms of prices. There's also a lack of spare capacity on the electricity system – so the wrong

combination of factors could lead to price spikes. We have aging infrastructure, particularly in our nuclear fleet, and issues around plant all being built to the same design (so a technical issue in one reactor could affect others). After you close coal, you need to incentivise green generation more, affecting prices.

- 4.2 When prices fell (2014), the speed was extreme, though not necessarily the extent. It happened across all commodity markets, mainly due to over-supply. Since Spring 2016, we've had an increase in demand, particularly for gas, and issues with gas storage so prices have gone up. That said, prices are still very good compared to a couple of years ago, but the trend is upwards.
- 4.3 There is a lot of short term uncertainty making near-term prices higher than long-term prices – it's much cheaper to buy power for Winter 2018 than for Winter 2017, which is unusual. The markets see a lot of risk over this current winter, a high level of risk for Winter 2017 and then risk reduces. There is quite a good opportunity now for 2018-19 purchasing but 2017 looks risky.
- 4.4 In one year, gas jumped from 34% to 45% of UK's electricity generation, because of a 53% decline in coal. These are extreme numbers for one year – it's a fundamental shift, with a rapid speed of change. We're very reliant on gas, which means we're reliant on gas storage, and on imports of LNG priced mainly in dollars and euros.
- 4.5 We run into severe risk for power generation margins, particularly coming into Winter 2017. Every year subsequently, the margins should be more comfortable because of new capacity being built.
- 4.6 The UK has one gas storage site, which accounts for 60% of storage and which is currently under restricted output (having been closed for a while). So, we have not been able to inject gas into long range storage for a while. This can mean the market gets oversupplied with gas, which pushes prices down in the very short term – but leads to greater volatility overall.
- 4.7 There's a changing ratio of costs – until now, procurement has been about the commodity cost, but it's changing. Now it's the non-commodity costs which are more of a factor, and these are more fixed. The only way to reliably avoid these costs is to generate and use locally – get off the grid. Network costs are also increasing – there's strain on the network. This is the change that will impact you the most – the markets will no longer be the largest chunk of your usage.
- 4.8 The key concern about Brexit is the loss of funding – EU can fund infrastructure at lower costs than Government. There is a risk of future infrastructure projects not going ahead.

Q1: How much has the fall in the value of the pound contributed to the change in prices?

A1: Not hugely, yet. It's outweighed by other factors – poor margins and poor gas supply override the exchange rate issues. Also, we've been importing less gas because of demand from other countries. That's traded in the dollar but we've not been buying. Imports are around 40% of the gas – so in the longer term there's an underlying direction.

Q2: One of our biggest challenges (in Cambridgeshire) is connecting distributed generation. Is this an issue in London?

A2: It's an issue across the board. We've spoken to UK Power Networks and this is why network fees are increasing quite substantially: they're trying to build capacity into the network to cope with different types of generation. The challenge is also that renewables generate at non-peak times. Hopefully battery storage will help with this – it smooths out the profile shape and makes balancing the system easier.

Comment (Peter North): In a London context, we look at gas engines – it's always worthwhile making sure if it's a firm connection or an interruptible one, because they have different costs. UKPN are currently investigating limiters which can disconnect your generator automatically. This might also reduce the connection costs. Some of these issues are now becoming smart. Smart operation of generators is coming to the fore.

5. Heat Networks Investment Project

Lucy Longstaff, BEIS

(see slides)

- 5.1 HNIP capital funding support was announced in 2015, with the aim of supporting the construction of over 200 heat networks in England and Wales. We want to see more good quality heat networks providing benefit to consumers and to help create the conditions for a self-sustaining market in heat networks. It's unlikely that there will be further capital funding after this Spending Review period.
 - 5.2 The total funding is £320m over five years. We have a pilot of £39m over two years; we're currently assessing applications and expect to make announcements around April of this year. We expect that the main scheme will launch this year, but we have to go through OJEU procurement for our delivery bodies as well as designing the scheme.
 - 5.3 The pilot offered grants and loans for public sector bodies; the types of support and applicants will be looked at for the main programme. The pilot also set minimum requirements (see slides), some of which were dictated by State Aid rules. HNIP operates a "funding gap" approach – to take the project from its current IRR up to the IRR demanded by equity investors in the project. We expect projects to have looked at other sources of funding first; we do not want to fund projects that would have gone ahead without our support. Projects under the pilot were coming forward with a wide range of capital asks. We also wanted to enable recipients to on-invest their funding into other commercial structures, so that was built in to the scheme design.
 - 5.4 Pilot applications were scored around short- and long-term carbon savings, customer impact (eg, heat price, quality of service) and social NPV.
 - 5.5 25 bids were received through the pilot, requesting £78.5m of funding and with total investment of £250m. The average request was 30% of CAPEX but there was a wide variety between applications.
 - 5.6 What might change for the main scheme?
 - Types of applicant – pilot was public sector but we might open to private and third sectors
 - Types of funding – loans, grants, possibly equity, guarantees?
 - Application assessment / compliance requirements – can we make it simpler without losing rigour?
- Q1:** The capital is very welcome but it does require a project to be very well developed. Project teams might have spent a long time getting there. The length of the programme might be a constraint for projects which need more development time. Some projects are proceeding but can't complete the commercial deal – for example, new developments have an opportunity to put pipes in but the partners haven't done the commercial deal. It's all about the guarantee – if the ESCO makes the investment in pipes, is there a guarantee that they could get their money back if connections don't go ahead? Could the public sector guarantee this and ask HNIP to underwrite

this? It's about investment ahead of need – public bodies don't have the money but could underwrite things, but would be more willing to do this if they knew they could make a retrospective application to you.

A1: It would be good to talk in a bit more detail about that. You do need to have a coincidence of timing for the project being ready and the funding window being open. We're looking at whether we will do the "funding round" approach or whether we'll do a more continuous application window. The challenge is – if it's continuous – are we confident that the projects we're selecting are the best value ones we might get over the whole window? The pilot will inform this.

Q2: Can we use this money to rehabilitate poorly performing plant / network? We could move towards lower temperature systems and controls in the buildings.

A2: Refurbishments were eligible in the pilot, but we would need to check about the elements within buildings. We do also have support through the HNDU for projects that are at an earlier stage of the process. If you're thinking about prospective opportunities, eg, masterplanning, we have support available through HNDU.

Comment (Peter North, GLA): We can help Boroughs develop their applications and get the most HNDU money. London was successful before but the rest of the country is catching up.

6. Regional Case Study: Mobilising Local Energy Investment in Cambridgeshire Cherie Gregoire, MLEI

6.1 Cambridgeshire is a very rural county – so there is a lot of contrast between our and your experiences. For example, we have farm estates, so one of our projects was a 12MW solar farm. We also have a huge growth agenda but with a very constrained network, so we need to develop better energy infrastructure. We wanted to be able to offer Energy Performance Contracting and procured a partner under the REFIT framework (Bouygues).

6.2 We're taking the lessons that we have learned from MLEI and the changing policy environment (e.g. reducing FIT rates) to move into our next phase. We had used FITs a lot to underpin our business model. We have an investment fund in place – we have £30m from PWLB which we use to loan out to schools, local authority sites and others. We add on little to the loan interest rate so that we can be self-funding.

6.3 We've invested over £18m, saving over £1.5m per year. A large proportion is from the 12MW solar farm, but we have also done projects in 23 schools and 7 corporate buildings. For Academies, we developed a managed services agreement in order to provide PWLB to them, done in consultation with the EFA. These have tended to be the larger schools. On corporate buildings, we've mainly done PV and lighting upgrades.

6.4 MLEI has led to upskilling of internal staff but also of Members.

6.5 Roughly 1/4 to 1/3 of schools come to us because their boiler is coming to the end of its life. We start with that but build a package around that.

6.6 Lessons learned: there's a big difference between potential projects and investible projects. In terms of our own buildings, Cambridgeshire has a focus towards rationalisation. We would be looking at projects only to find out that we would be disposing of buildings or changing the use of sites. On the schools side, there was a large learning curve for both parties – the decision making process is longer and

requires more handholding. You need political cover for the development of projects, because there is a financial risk in developing projects that might not come off.

6.7 On electricity market reform – we are doing a smart energy grid demonstrator project. We're looking to build a 1MW project – PV with battery storage, electric vehicle charging, and the remaining electricity sold to a local customer. We have our funding and are looking for match funding from ERDF. The project helps us to generate revenue which can then be used for services such as Adult Social Care.

6.8 We're in the stage where REFIT 2 has closed so I wanted to find out if anyone has been using REFIT 3 and how it compares. We're also interested in others' experiences of negotiating bi-directional PPAs and with PV and energy storage.

Q1: I'm interested in your use of PWLB with academies. Academy Trusts aren't limited to a geographic area – are there restrictions about the use of the funding?

A1: We tend to avoid working with Trusts that go across multiple areas, and there are still plenty of opportunities. It has come up before.

Comment 1 (Croydon): It's difficult in a London context because Academy Trusts do go across borders. It makes sense for neighbouring authorities to work together. With schools, you kind of need the upfront funding but finance isn't the limiter. There are commercial models to provide these services to schools. We formed a 100% owned company to provide educational services to schools.

Comment 2: Cross borough partnership does exist in different parts of London. A lot of councils are merging their services and have bi-borough or tri-borough arrangements for different things.

Comment 3: These arrangements work until one of the councils changes political leadership.

Comment 4: Boroughs have had mixed experiences of REFIT. I don't think anyone has signed to REFIT 3.

Comment 5: Management fees under new REFIT are quite high so we are stepping away from it. It'd be cheaper for us to manage internally.

Comment 6: The Crown Commercial Services fee is quite high

Q2: Do you have a payback criteria on projects?

A2: For internal projects with local government, they have an 8 year payback. Schools generally have a 15 year payback, which allows for heavier investments in boilers. It's up to the school if they are happy to take out a loan for that length of time. Income from FIT / RHI goes to the school. We set parameters with our Members in establishing the loan fund – they were comfortable with this. The Smart Energy Grid project is looking at 20-25 years, because of the strange policy environment we're in at the moment.

Comment 7: It kind of depends where your money is coming from. Our colleagues are happy with longer paybacks from PWLB, but less so from other sources, which is why we stopped using Salix.

Q3: What's the margin that you add on to PWLB?

A3: 0.3%

7. AOB

If you are able to pay membership fees this year, please do. It is £200 for the year. Please contact kathryn.todd@se-2.co.uk to make arrangements for invoicing.

8. Dates for future meetings

- 6 April 2017, TfL – this will also be the AGM
- 13 July 2017, Kensington Town Hall