

**LBEG Summer Meeting
Thursday 14th June 2018**

Kindly been sponsored by Ramboll



Minutes

Attendees

Name	Organisation
Catherine Arotsky	Brent
Neil Luscombe	Brent
Julie Granger	Camden
Tom Parkes	Camden
Malcolm Bell	Croydon
Risa Wilkinson	Ealing
Robin Adams	EDF
Sam Taylor	EDF
Caitlin Westropp-Evans	Greenwich
Shaun Spencer	Hackney
Anis Robinson	Hammersmith & Fulham
Saeed Atlas	Harrow
Graeme Low	Islington
Andy Morgan	Kent County Council (LASER)
Richard Neal	Merton
Ben Murphy	MME
Christopher Ray	MME
Lucy Padfield	Ramboll
Rachael Mills	SE ²
Ian Watts	Sutton
Beata King	Transport for London
Chris Little	Westminster

Apologies

Name	Organisation
Sabine Martini	Enfield
Gonzalo Jimenez	Kensington & Chelsea RB
Shadia Snelling	Kingston
Jacob Adekunle	Redbridge

The speakers have not released their presentations for circulation: however, notes from their sessions are included in the minutes below. EDF provided further information about their partnership with Measure My Energy (MME) and a brochure on PowerNow and PowerReport, both of which are available to download at:
www.lbeg.org.uk/meetings/our-last-meeting-14th-june-2018/

1. AGM

• Finance

The Treasurer's Report is given in Appendix 1.

LBEG has survived over recent years on legacy funding. Membership fees were reintroduced in 2016-17. However, spending last financial year exceeded income, putting LBEG in an unsustainable financial position.

The Committee decided it needed to act quickly and therefore agreed to:

- Increase meeting sponsorship to a minimum of £350
- Increase membership fees to £290: we hope more members will be able to pay going forwards
- Adjust our catering for meetings according to cash flow: this may mean sometimes not having lunch or reducing the servings of tea/coffee

The main expenditure for LBEG is the secretariat. However, the Committee have agreed to maintain this at current levels.

At the heart of generating more income, we need to make the meetings more interesting, relevant and of high quality for all members. As part of this, all members are actively encouraged to suggest meeting topics and speaker ideas

• Committee

The new Committee was voted in as follows:

- Chair: Saeed Atlas, Harrow
- Vice-Chair: Gonzalo Jimenez, Kensington & Chelsea
- Treasurer: Beata King, TfL
- Member: Shaun Spencer, Hackney
- Member: Anis Robinson, Hammersmith & Fulham
- Member: Graeme Low, Islington
- Member: Andy Morgan, Kent (LASER)
- Member: Chris Little, Westminster

2. Presentation summaries

a) District Heating

Lucy Padfield, Ramboll

- As the ex-Energy Manager at LB Islington, Lucy began by recapping on her experiences of the **Bunhill District Heating Scheme**. Since 2000 there's been:
 - 10 feasibility studies
 - 3 masterplans
 - 15 projects
 - 12 funding bids
 - 2 delivered schemes

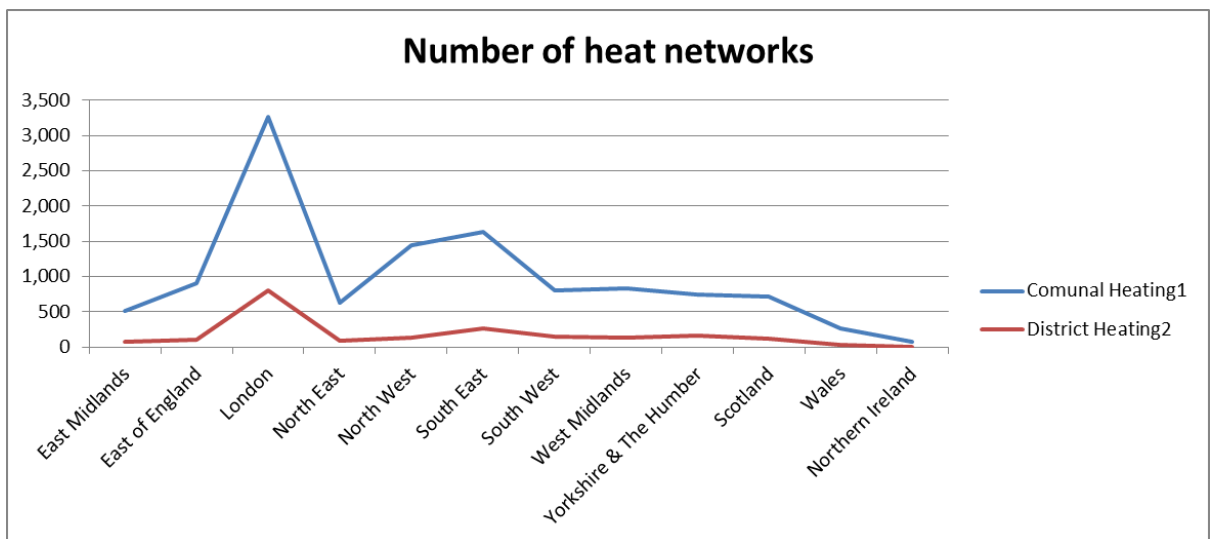
It can all take a while - but momentum is now faster so don't lose heart!

Islington took a municipal approach and retained ownership of the asset. All financial benefits are fed back into the scheme to help connected residents. This also means Islington has control of the risks.

Phase 2 will be the first EU project to take waste heat from the metro to feed existing homes (not new build). It will also include cooling in the summer (TfL have just installed a new reversible fan). The Bunhill 1 Energy Centre will also be moved: it was containerised just in case this happened - the wooden facade is just a fence.

- **Ramboll** has 13,000 experts in 35 countries. In district heating they undertake mapping and commercialisation, then continue through to strong delivery and long-term operation (especially on the continent). They understand the techno-economics (risks, sensitivity analysis, etc) and commercial/financial optimisation (governance, ownership, funding)
- Lucy has recently returned from a trip to **Denmark** and shared the following insights:
 - In Copenhagen, the Danes have built something amazing: we're still scratching our heads
 - Their city-wide system provides a buffer/battery (eg if there's a lot of wind it gets converted to heat)
 - They recognise the natural monopoly of the system and so it is owned by the users at a municipal and co-operative level. There is also state ownership of other utilities which makes planning easier:
 - Technical efficiency driven by user ownership
 - Illegal to make a profit from heat
 - Very cheap financing for public sector
 - Price regulated
 - Looking to heat pumps to make up an increasing proportion of heat mix going forwards. Also very large scale solar
 - Of the 1m people in Greater Copenhagen, 99% are on the heat grid (70% nationally)
 - They are developing a final energy policy to 2050, recognising the need district heating to help balance renewables. Heat Plan Denmark states:
 - It is important to focus on **integrated solutions**, including building envelope, building installations, district heating and power system
 - **District heating** is a natural part of the urban infrastructure in modern cities
 - District heating is a **precondition** for efficient, flexible and cost-effective use of renewable energy and CHP for urban heating, not least waste-to-energy and wind
 - **District cooling** is a natural part of the urban infrastructure in districts with sufficient cooling load
 - A stable energy policy since 1976, municipal planning and a tradition for **co-operation in the society** have been important preconditions for CO₂ emission reductions in Denmark
 - But their concerns are not dissimilar to those we have in the UK:

- Governance (and how it can become a rabbit hole, taking up lots of time)
 - Approach to finance and risk
 - Briefs need to be as accurate as possible - makes complicated procurement simpler
 - Consultant reports can pile up - need to move to delivery
- Lucy also Chairs the **ADE Heat Network Forum**, which met earlier this week. She was able to share the following:
 - The BEIS Special Statistics on Heat Networks (2018) shows how well London is doing (see chart below). The capital has 3.7TWh of generation. Cooling also starting to have a presence



- CMA are doing a light touch investigation into heat networks.
 - Their interim report shows that customers are getting a quality of service and pricing at least comparable with gas/electricity.
 - We think their final report will recommend regulation, which is extremely likely to be adopted by Government: Ofgem is mentioned a lot in the interim report so it seems likely this will be the route they take.
 - They do however understand it's a new and growing industry.
 - The report is big on transparency (as is the case in Denmark)
 - They will publish their final report in July. The government then has 90 days to respond so the concept of regulation will be quite real by the end of the year

Comment: We're keen to have regulation. We have new offices that are connected to the local DH network. We've had tenancy there for 10 months but still have no idea on tariff or billing, which also means we can't budget for the year ahead. There's no contract or agreement in place (an issue shared with other members)

Q1: What's the payback at Bunhill?

A1: Phase 1 was entirely grant funded so there wasn't payback in the same way. However, we wanted to deliver benefits to residents and so wanted the tariff

to be at least 10% below what gas could offer. Phase 2 is a blend of Council, EU, ECO and private connection funding.

Q2: There's been lots of HNDU studies: do you think there's enough industry capacity to deliver them?

A2: I agree there's scant consultancy capacity even to do the reports. It will be interesting to see what happens when HNIP kicks in

b) Metering and sub-metering: energy, water and beyond **Robin Adams, EDF**

- Power Now is EDF's submetering solution to offer better management tools for metering buildings. EDF is working in partnership with Measure My Energy: there will be a press release in the next few weeks. They are aiming to provide the most cost-effective solutions to their customers.
- Looking at the adoption of technology:
 - It took 75 years for the telephone to reach 50 million users
 - It took 38 years for the radio to reach 50 million users
 - It took 3 years for the iPhone to reach 50 million users
 - It took 35 days for Angry Birds to reach 50 million users.
- It's not just technology which is accelerating changes: the rate of change is increasing too. Pre-privatisation, companies used to do short term manual monitoring of their buildings: now it's automatic half hourly metering. If you can't measure it, you can't manage it: and we need information we can rapidly respond to.
- There's a lot more embedded generation, more renewables, and electric vehicles and their impact on the network. We now have to also consider DSR schemes, Firm Frequency Response, Capacity Market and Triad Management. Traditional metering methods no longer deliver what we now need.

Ben Murphy, Measure My Energy (MME)

- The issues when it comes to metering include:
 - Half hourly data resolution is only an average
 - Granularity of data is expensive, and even then, it isn't circuit or appliance specific
 - Collection frequency is often day+1
 - Sub metering is traditionally prohibitively expensive and so is used sparingly
 - Physical space restraints - where do you put them, even if you can afford them? (riser cupboards are small)
 - Data rendering and visualisation mean you can drown in data
 - Data access - who can use it to enact change? Do users know?
- So, what MME does is provide you with the detail of where and when your money is being spent, in real time, to a high granularity and frequency. In effect it's like having an itemised bill. You can set alerts and alarms so you can pro-actively respond

- MME has developed the hardware, which you would own. It's small and cost-effective, meaning you could deploy it on every fuse board in the building if you wanted to.
- Data is streamed in real time (lag no more than 6 seconds) to as many people as you like via a simple, intuitive dashboard.
- It's mainly a commercial offering, but can be scaled down to a (large) domestic
- The hardware can also act as a data logger for other meters, eg water, gas, heat. It can stream any data that comes through the meter, eg kWh, flow & return temperatures, air quality, pH levels. As we developed the hardware, software and cloud, we can adapt the kit to meet your needs (if commercially viable)
- Benefits include energy efficiency, validation, added operational resilience, regulatory compliance, renewable energy management, reduced carbon footprint

Q1: How does it interact with existing meters, AMRs, etc?

A1: Our PDM (Power Distribution Monitor) is the actual meter. It clamps on so it's non-intrusive. If you've already invested in other sub-metering, we can gather that data too

Q2: What's the cost / payback?

A2: 12x3phase meters typically cost about £2500 to supply (though it does vary considerably from site to site). A similar traditional sub-metering system would cost £12-£15k. The payback can be very short, but it's up to you to act on the information you receive.

Q3: How many units should I install in one building?

A3: It depends on the building size, scale, design and age – maybe two per floor? (on each fuse board)

Q4: Can you help show, for example, the lighting load on one floor, and then use this data to validate savings for retrofit projects?

A4: Yes – we're doing this now

3. Member updates and ideas for our next meeting

- Ideas for our next meeting included:
 - RE:FIT
 - Optimising resources – software solution for reporting (Carbon Descent)
 - Policy update
- The next meeting is on Tuesday 16th October at LB Islington

Appendix 1: Treasurer's Report

2017/18 Invoice Summary

	Value	Number
Invoices issued	£ 2,800.00	14
Payments received	£ 2,400.00	12
Sponsored lunch	£ 400.00	2
Total income	£ 2,800.00	

2017/18 Costs Paid

Secretariat fees	£ 2,880.00
Website development	£ 480.00
Catering of forums	£ 207.00
Web domain and hosting renewal	£ 143.85
Bank charges	£ 71.30
Total costs	£ 3,782.15

Costs outstanding

Catering of forums	£ 210.00
Thank-you gifts for departing committee members	£ 77.52
Total costs outstanding	£ 287.52

2017/18 Account Summary

Opening balance	£ 2,157.95
Income	£ 2,800.00
Outgoings	£ 3,782.15

Account balance on 05/06/2018

£ 1,175.80

Income commitments for 2018/19: £3980

Membership fees: £3480

Brent
Croydon
Hackney
Hammersmith & Fulham
Harrow
Islington
Kensington & Chelsea
Kent/LASER
Lewisham
Merton
TfL
Westminster

Sponsorship: £500

Connected Energy
Ramboll