

Plugging the energy gap

London's energy generation strategy and national energy policy

December 2011



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Chair's Foreword



With increases of up to 18 per cent in energy prices this winter and one in four households in London already in fuel poverty, these latest price rises will cut into household incomes, meaning more families will struggle to meet their energy bills.

This report highlights a potential energy gap, which could force prices even higher. London already consumes 13 per cent of national electricity whilst only generating 2 per cent of the national output. Projects need to be developed to plug the gap with low carbon forms of energy in order to replace energy sources which are no longer viable and to cope with the increases in demand, particularly with the potential expansion of electric vehicle usage.

The problem of the growing energy gap is further emphasised on the demand side by the lamentable performance of energy companies with regard to their energy efficiency obligations in London compared with other regions. These home insulation and community energy supply programmes, which were supposed to make significant inroads in reducing household demand, come to an end in 2012. This is also when the Mayor's own RE:NEW programme of home energy insulation in London comes to a close, having already been scaled down.

On the supply side, it is important that we make the most of waste-to-energy and decentralised energy opportunities, exploiting the full potential of projects like the London Array off-shore wind farm, and that London's interests in national electricity transmission issues are accommodated.

In this report, we have put forward a number of recommendations which government should pursue to better support London, the Mayor and the wider GLA.

To stop any looming energy gap being reflected in year on year increases in energy prices in London, we need to start plugging the energy gap with a London energy generation strategy which prioritises London within the national energy policy framework.

Murad Qureshi AM, Chair

Executive Summary

To meet its energy needs and to reduce carbon emissions, the UK needs to invest hugely in energy infrastructure - an estimated £200 billion over the next decade. Major investment needs include improving energy efficiency in Britain's homes and other energy users, and new low-carbon electricity generating capacity to replace aging and polluting power stations. The vast majority of the investment will need to come from the private sector, but public policies will need to play a role in identifying opportunities and providing incentives to the market.

The GLA's energy strategy for London plays an important role in delivering this transformation, both in energy generation and energy efficiency. But national government policies need to complement and support such a major regional strategy, and the Committee's report identifies several areas where changes to national policy could make a big difference in London:

- District heating schemes can provide heating to thousands of homes at increased efficiency. Such schemes should be eligible for Government support, such as the Renewable Heat Incentive.
- The Government is currently consulting on its Green Deal to fund energy efficiency measures in millions of homes across the country. The GLA has developed a project called RE:NEW that does just this, cutting costs and carbon emissions for thousands of London households. Essential features of the RE:NEW approach should be built into the Green Deal, including offering a whole-building package of measures to maximise benefits and cost-effectiveness, and promoting the deal street by street to maximise take-up and minimise delivery costs.
- The Government is also consulting on options for strategic funding for reserve capacity in the electricity network to protect against blackouts. This funding should be on offer not just to large central power stations, but also to the kind of local generators to be established in London under the GLA's strategy.

The GLA Group, particularly the London Underground division of Transport for London, is a significant energy purchaser, and the report recommends that the Mayor should show how London Underground will reach its aspirations to purchase more renewable energy.

Introduction – Tackling London’s ‘energy gap’

The UK has a gap in its domestic energy balance: domestic production of coal, oil, gas, biofuels and primary electricity (nuclear and renewable) can meet only 70 per cent of primary demand.¹

The energy gap has opened up since the end of the peak years of North Sea oil and gas production in 2004.² To fill this gap, the UK imports large quantities of energy, nearly all in the form of fossil fuels.³ Because of the UK’s growing import reliance, its energy market is increasingly subject to the volatile world prices of these commodities, with the risk of price spikes if supplies are disrupted.

The electricity gap

The energy gap concept can also be applied specifically to electricity – a gap exists if domestic generating capacity falls short of peak electricity demand. The UK does not currently have an electricity gap, but there are factors that could create one in the medium term:⁴

- Older nuclear power stations will be decommissioned at the end of their lives (many by 2015), and large, carbon-intensive fossil fuel plants (such as most coal-fired stations) must be shut down between 2012 and 2016 under EU and national environmental regulations to mitigate climate change⁵
- Electricity demand is expected to increase as sectors like road transport and domestic heating shift from high-polluting fossil fuel technologies to cleaner and more efficient electric technologies

¹ Energy Flow Chart 2010, Department of Energy and Climate Change (DECC). www.decc.gov.uk/en/content/cms/statistics/publications/flow/flow.aspx (hereafter referred to as Energy Flow Chart) – total domestic primary production 158.1 million tonnes of oil equivalent (mtoe) but primary demand 227.5 mtoe

² Digest of UK Energy Statistics (hereafter referred to as DUKES) 2010, page 157, <http://www.decc.gov.uk/assets/decc/Statistics/publications/dukes/324-dukes-2010-longterm.pdf>

³ Energy Flow Chart – total imports 156.5 mtoe, of which 2.3 mtoe primary electricity and biofuels, the rest oil, gas and coal. The size of imports is greater than the gap between domestic production and primary demand because the UK is also an exporter of refined products and in certain seasons of raw fuels.

⁴ Meeting of the Environment Committee on 19 May 2011 (hereafter referred to as 19 May meeting transcript pages 1-5. Transcript at <http://www.london.gov.uk/moderngov/mgConvert2PDF.aspx?ID=4749&T=9>. See also Appendix 5 of this report for meeting details. Also CCMES, pages 74-78; *Planning our electric future: a White Paper for secure, affordable and low-carbon electricity*, DECC July 2011 (hereafter referred to as Electricity Market Reform White Paper), page 59

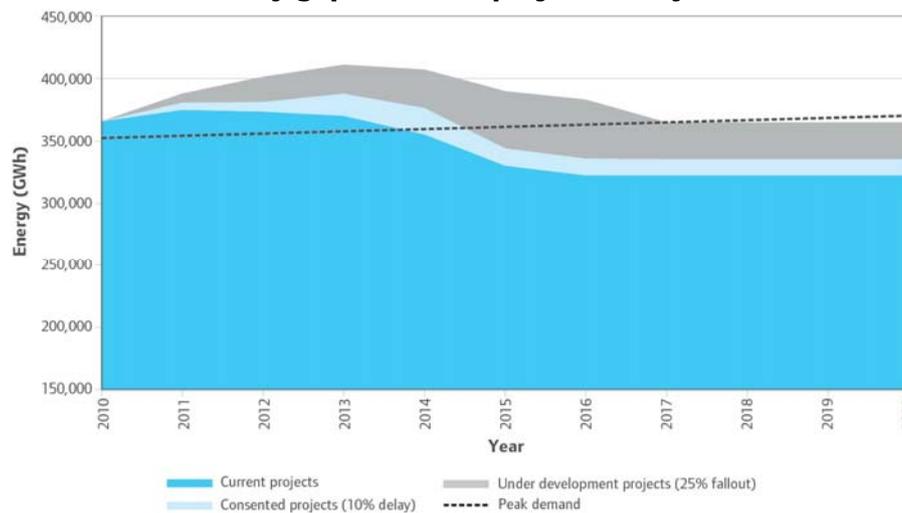
⁵ *Electricity Generating Plant Closures*, DECC <http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file49437.pdf>; see also <http://www.bloomberg.com/news/2011-03-28/u-k-co2-floor-may-drive-early-power-plant-closure-matrix-says.html>

- Replacement energy generating capacity takes time and money to bring on stream. This may be especially true for newer technologies like renewable energy and other low-carbon sources. Building new plant is also subject to planning and other consents.

The Mayor's forecast electricity gap

The Mayor's Climate Change Mitigation and Energy Strategy provides an estimate of the national electricity gap that would arise if new generating capacity is not put in place. As older nuclear and fossil fuel plants have to close, the national gap in electricity supply, compared to DECC peak demand forecasts, could reach 43,000 GWh per year by 2016 – over 10 per cent of currently-existing capacity. New generating capacity currently planned and proposed will significantly reduce this gap and may be enough to close it but, if the new capacity is subject to delays or cancellations, then the Mayor identifies the threat of an electricity gap remaining, without further measures to increase capacity and/or reduce demand.⁶

National 'electricity gap' if future projects delayed



Source: GLA⁷

The national gap would be small (about 7,500 GWh per year by 2020), but since the electricity network must balance supply and demand at

⁶ CCMES pages 74-78

⁷ CCMES pages 74-78

all times, any unfilled gap could have significant consequences, such as blackouts or mains voltage reductions at peak demand.⁸

Applying the electricity gap concept to London

The Mayor's energy strategy quantifies the electricity gap for London as a share of the potential national gap according to London's share of current national electricity use (13 per cent). The UK need for new electricity generating capacity could be as high as 43,000 GWh per year by 2016, of which London's share would be about 5,600 GWh. Of the 7,500 GWh per year demand that the GLA estimates could be unmet by 2020 if capacity proposed and in development does not go ahead as planned, the GLA estimates London's share at 981 GWh per year.⁹

London currently uses 41,000 GWh of electricity per year, about 13 per cent of the nation's electricity usage,¹⁰ but has only about 2 per cent of the nation's generation capacity.¹¹ This suggests that something like 85 per cent of London's consumption - in the order of 35,000 GWh per year, comes from outside its boundaries.

The Mayor's strategy aims to increase London's decentralised electricity production by about 8,000 GWh per year by 2025.¹² The final version of the strategy does not include a figure for electricity demand reduction from energy efficiency measures, but in earlier drafts an estimate was quoted for one of the efficiency programmes (RE:NEW) of 756 GWh in reduced annual electricity demand by 2020.¹³ The measures in the strategy therefore could potentially close not just London's share but much of the national electricity gap in the

⁸ Electricity Market Reform White Paper, page 5, CCMES page 78

⁹ 19 May meeting, transcript page 2; CCMES, pages 74-78.

¹⁰ Digest of UK Energy Statistics 2011 (DECC), page 126

<http://www.decc.gov.uk/assets/decc/11/stats/publications/dukes/2307-dukes-2011-chapter-5-electricity.pdf>

¹¹ Digest of UK Energy Statistics 2011 (DECC), pages 147-157. Most of the UK's capacity is accounted for by a listing of main power stations, of which London has under 2% by capacity. There is a table of named CHP plants, of which slightly under 5% by capacity can be identified as locations in Greater London. A small proportion of UK capacity is not covered by these lists - assuming London's share of this capacity is no more than 10%, London's overall share of UK capacity is less than 2.5%.

¹² CCMES, pages 86-7, giving total decentralised energy production estimate as 23,500 GWh per year by 2025, and email from GLA Climate Change and Energy team to the Environment Committee's secretariat on 24 November 2011, indicating that one third of this is expected to be electricity and the rest heat.

¹³ Draft (October 2010) CCMES, page 30

GLA's projection scenario, and make a significant reduction in the difference between London's own generation and its consumption.

Closing the energy gap

Concerted action will be required in order to meet the UK's energy needs: the government estimates that £200 billion must be invested in new infrastructure over the next ten years – more than twice as much as over the last decade.¹⁴

This investment will create future upward pressure on energy prices – and therefore on bills for Londoners and London businesses. There may also be rises in world fuel prices. However, the Government says that any price rises will be at least partly offset by Government policies (such as efficiency programmes to reduce the energy used by each household): it is estimated that by 2020 average household bills will be 7 per cent, or £94, lower than they would otherwise be without the policy effect.¹⁵ Overall domestic energy bills could still rise from today's levels, and this could especially affect those on low incomes and others in 'fuel poverty'.¹⁶

With planning, timely action and the right strategy, supply and demand can be balanced with demand reduction and low-carbon energy sources, meeting climate change goals as well as energy needs. If action is delayed and an electricity gap threatens, the most likely option will be to turn to established, quick-to-build technologies such as combined cycle gas turbines.¹⁷ But greater reliance on these fossil-fuel based technologies would be unlikely to meet carbon goals, and using them to fill an immediate gap could then leave the choice of generating higher carbon emissions for many years, or of taking the higher-carbon capacity off-line early and paying a high financial price to compensate the operators.

National and London roles in tackling the gap

The energy gap is a national issue, and the UK's energy system is managed at a national level. The markets are regulated by the Office

¹⁴ 19 May meeting; CCMES page 76

¹⁵ Annual Energy Statement by the Secretary of State for Energy and Climate Change (Hansard: 23 November 2011: Column 299. or http://www.decc.gov.uk/en/content/cms/news/aes_2011/aes_2011.aspx)

¹⁶ Fuel poverty will be addressed in-depth in a forthcoming report from the Assembly's Health and Public Services Committee.

¹⁷ Electricity Market Reform White Paper, page 28

of the Gas and Electricity Markets (Ofgem),¹⁸ within overall government policy about the nature of the system and the markets that make it work. Government policy is aimed at encouraging low-carbon electricity generation, and to encourage and enable users to be more energy-efficient.

At the London level, the Mayor's Climate Change Mitigation and Energy Strategy seeks to achieve the Mayor's overall target of reducing London's total carbon emissions by 60 per cent by 2025. Work streams in the strategy address energy supply, and energy efficiency in homes, workplaces, new buildings and transport.

To meet the UK's energy needs at minimum financial and environmental cost, the national government needs to work effectively with major regions such as London. This report therefore examines national and mayoral strategies in both energy supply and energy demand. The Committee has previously made comments and recommendations about the Mayor's Climate Change Mitigation and Energy Strategy. By seeking to increase and decarbonise energy supply, while reducing energy demand, London's strategy fits within the national strategy. However, there is more that the national approach could do to support London's efforts to generate more electricity and to become more energy efficient.

The Committee has therefore written to the Secretary of State for Energy and Climate Change, outlining the findings of this report and its recommendations to Government. The text of this letter is attached as Appendix 2.

¹⁸ <http://www.ofgem.gov.uk/About%20us/Pages/AboutUsPage.aspx>

Energy generation

To replace existing electricity generating capacity that is due to cease production, and avoid an electricity gap, significant new capacity is required.¹⁹ Nationally, £120 billion of investment is needed in energy generation (the majority of the investment needed across the whole energy sector).²⁰

At the same time, to meet climate change targets, electricity supply must become much less carbon-intensive. Additional low-carbon energy capacity will be needed, including renewable energy. However, low-carbon sources cannot expand to meet all the electricity needs immediately, so fossil fuels will still be used. Therefore the carbon emissions per unit of energy from fossil fuels must also be reduced.²¹

National energy generation strategy

The Government, and the EU, have a range of existing policies and incentives to encourage low-carbon energy generation, including the Carbon Price Floor, the Climate Change Levy, the Emissions Trading Scheme, the Feed-in Tariff, the Renewable Heat Incentive and the Renewables Obligation.²² However, some commentators have forecast that the response of the energy industry to these policies will not be enough to meet Government and EU carbon reduction targets²³ – in which case more action will be needed.

The Electricity Market Reform White Paper therefore seeks to further support low-carbon generation and to prevent the most polluting forms of fossil fuel plant being built, to develop new institutions and mechanisms to enable the market to support energy policy objectives, and to facilitate new energy suppliers coming to market.²⁴ The Government is also consulting on changes to levels of incentive under the Renewables Obligation – proposing greater (compared to previous

¹⁹ CCMES, pages 74-76 and see pages 9-10 of this report

²⁰ 19 May meeting

²¹ Electricity Market Reform White Paper; 19 May meeting, transcript pages 1-2

²² 19 May meeting, presentation slides from London Array (<http://www.london.gov.uk/moderngov/mgConvert2PDF.aspx?ID=4750&T=9>) and transcript pages 2-9, 23; Government Carbon Plan page 16; CCMES page 73; Electricity Market Reform White Paper

²³ Cambridge Econometrics report, *UK Energy and the Environment*, September 2011. <http://www.camecon.com/UK/UKEnergy/PressRelease-UKEnergy.aspx>

²⁴ 19 May meeting, transcript pages 2-4, 18; Electricity Market Reform White Paper

plans) support to offshore wind power and some tidal stream and wave power plants, and less support to a number of others.²⁵

The main focus of the government's energy generation policy is on centralised generation in large-scale power plants.²⁶

The London Array²⁷

The London Array is a large offshore wind farm under construction in the Thames estuary. Phase 1 will provide 630 MW of renewable generating capacity (enough to supply over 470,000 homes and save 900,000 tonnes of CO₂) and is expected to be fully operational by the end of 2012. The investment of 2.2 billion euros is being provided by an international consortium including the Danish company DONG Energy, E.ON and the Masdar Initiative from Abu Dhabi, with public subsidy available to offshore wind power. A proposed phase 2 would raise the generating capacity to 1 GW (enough to supply 750,000 homes or about a quarter of Greater London) and save 1.4 million tonnes of CO₂.

Mayoral energy generation strategy

London's energy generation strategy takes a different approach from the main national strategy. In recent years, large power plants have usually been sited either where land is less expensive and exposure of the population to their emissions is low, or where there are sources of renewable energy such as wind or water. Therefore there are few such plants in large urban areas such as London.²⁸

The Mayor's energy strategy therefore envisages a significant increase in 'distributed generation' – primarily for local use, at scales ranging from individual homes to large district heat and power schemes. As it

²⁵ Renewables Obligation Banding Review 2013-17 – Public Consultation. DECC <http://www.decc.gov.uk/assets/decc/11/consultation/ro-banding/3235-consultation-ro-banding.pdf>

²⁶ 19 May meeting, transcript page 16; Electricity Market Reform White Paper

²⁷ London Array presentation to the 19 May meeting <http://www.london.gov.uk/moderngov/mgConvert2PDF.aspx?ID=4750&T=9>

²⁸ Power stations in London - DUKES 2011, pages 147-157. Limited renewable energy sources in London - Environment Committee meeting of 15 July 2010 <http://www.london.gov.uk/moderngov/Data/Environment%20Committee/20100715/Minutes/Appendix%20-%20Transcript%20150710.rtf>, transcript page 15 Air quality impacts of combustion for energy - Mayor's Air Quality Strategy <http://www.london.gov.uk/sites/default/files/Air%20Quality%20Strategy%20v3.pdf>, pages 113-118

can be added to existing buildings or combined with new developments, there is much more scope for this kind of generation in London. Indeed, the Mayor's strategy calls for £5 to £7 billion of private investment by 2025 into this sector.²⁹ From a national perspective, the sums involved are relatively modest,³⁰ but if successful the Mayor's plans would enable a quarter of London's energy needs to be met from distributed generation, of which about half could be renewable.³¹

The GLA cannot provide these levels of investment directly; its role is to stimulate market provision in London – to identify opportunities and to support schemes in coming to market. GLA-supported projects are to act as precedents and exemplars.³² Recent GLA work to promote energy generation includes:

- mapping potential decentralised/renewable generation capacity, and looking at the limits to achieving the potential³³
- supporting projects with finance and management expertise³⁴
- a supportive planning policy, with advice to specific projects seeking consent³⁵
- identifying public sector energy users as anchor customers³⁶

The Mayor's energy programmes have previously been funded through the London Development Agency. With the abolition of the LDA, these programmes are now being transferred to the GLA. However, with reduced public funding available³⁷, much greater input will be needed from the private sector and other funding sources, including for example a European ELENA grant for advice to support decentralised energy projects to market.³⁸ Delivery of the GLA's

²⁹ CCMES, page 99

³⁰ 19 May meeting, transcript pages 10, 13

³¹ CCMES, pages 79-83

³² 19 May meeting, transcript pages 12-13

³³ 19 May meeting, transcript pages 10-12; CCMES pages 79-83 and 88-91

³⁴ CCMES, page 97

³⁵ 19 May meeting, transcript pages 10, 16; CCMES pages 91-94

³⁶ 19 May meeting, transcript page 14

³⁷ Although project allocations are currently subject to a prioritisation process, figures in the draft GLA budget suggest that there may be £15-20 million available for former LDA programmes altogether. For comparison, the budget for the climate change theme only was over £30 million in 2010/11.

³⁸ Letter from Mayor's Director of Environment and Digital London to Chair of Environment Committee, 3 August 2011

<http://www.london.gov.uk/moderngov/mgConvert2PDF.aspx?ID=5676>

strategic goals on energy generation is therefore more challenging than when they were first envisaged.

Waste to energy

The GLA envisages that an important energy source for London's distributed generation should be fuels derived from waste, including general waste that can be burnt or gasified for combustion, and food or other organic waste that can be digested by bacteria to produce combustible gas.³⁹ The GLA sees the potential for many small to medium schemes, adding up to about half the Mayor's renewable energy generation target.⁴⁰ On the Mayor's own calculations, municipal waste could power a quarter of a million homes in London.⁴¹

As well as advice and support from the GLA programmes on distributed energy, waste-to-energy schemes can benefit from two significant sources of capital finance – the London Waste and Recycling Board (LWaRB), and the London Green Fund. LWaRB supports waste-to-energy schemes on the way to commercial operation, with grants, loans and other financial support, planning to spend £26 million over the four years 2011–2015.⁴² It expects that by 2015 there should be four or five plants in operation following LWaRB input.⁴³ The London Green Fund has allocated £35 million, alongside other investment to create a total fund of £70 to £200 million, to the Foresight Environmental Fund which will invest in near-to-market waste-to-energy and recycling projects in London.⁴⁴

The main customers for waste-to-energy plants as a waste management option are waste authorities. This Committee's recent report *Waste not, want not*⁴⁵ identified potential issues with the governance structures for waste management in London, recommending that the Government review the current statutory

³⁹ CCMES, pages 101–102

⁴⁰ 19 May meeting, transcript page 11

⁴¹ Mayor's draft Municipal Waste Strategy, page 55

⁴² LWaRB 2011 Business Plan, page 11

<http://www.lwarb.gov.uk/UserFiles/File/Board%20Papers/14-06-11%2006%20-%20Business%20Plan.pdf>

⁴³ 19 May meeting, transcript pages 19–23

⁴⁴ 19 May meeting, transcript pages 13–14; see also

http://www.foresightgroup.eu/news_more.asp?news_id=99

⁴⁵ *Waste not, want not*, London Assembly Environment Committee report October 2011, hereafter referred to as *Waste not, want not*.

<http://www.london.gov.uk/sites/default/files/Recycling%20Rates%20Final%20Report.pdf>

arrangements for waste management governance.⁴⁶ In that report, the primary interest was increasing recycling, but the Committee also considered the benefits of using waste as an energy source⁴⁷ and made it clear that more flexible governance and contracts for waste disposal would support the development of waste as an energy source, and potentially a low-carbon renewable one.⁴⁸ Recommendations 3 and 4 of that report are therefore also important for London's energy strategy.

Other past work of the Committee has also considered waste-to-energy generation, and made recommendations for actions that could increase London's contribution to energy generation and decarbonisation. In particular, the Committee's report on waste to energy *Where there's muck, there's brass*⁴⁹ called on the Mayor to set out how grid connections for waste-to-energy generators will be financed in London. Also, the Committee's response to the Mayor's draft Waste Management Strategy called for a clear specification of the expectations, responsibility and accountability of partners.

Recommendation 1

The Mayor should:

- **set out how grid connections for waste-to-energy generators will be financed in London**
- **give a clear specification of the expectations, responsibility and accountability of partners involved in delivering the Mayor's waste strategies and in particular the waste-to-energy elements**

⁴⁶ *Waste not, want not*, chapter 5

⁴⁷ *Waste not, want not*, pages 18-19

⁴⁸ *Waste not, want not*, pages 28 and 37-39

⁴⁹ <http://www.london.gov.uk/archive/assembly/reports/environment/waste-energy-schemes-09.pdf>

The Committee's *Where there's muck, there's brass* report also considered the role of LWaRB in delivering waste-to-energy generation, and recommended that LWaRB should bring together information on all the contracts that boroughs have entered into and provide advice on how to ensure they will generate the waste streams necessary to support new waste-to-energy plants

Recommendation 2

LWaRB should:

- **collate information on the waste disposal contracts that boroughs have entered into**
- **provide advice to boroughs on how to ensure that they will generate the waste streams necessary to support new waste to energy plants**

Decentralised energy

The Mayor's target is for 25 per cent of London's energy (both heat and electricity) to come from decentralised generation by 2025.⁵⁰ As an illustration, the Olympic Park energy centre (a combined heat and power plant) will in the long term supply up to 10,000 homes to be built on the Games site.⁵¹ The Mayor's decentralised generation target is equivalent to 170 such medium-scale plants.⁵² Decentralised generation in London will contribute to national targets to reduce the energy gap and carbon emissions.

When decentralised energy generators make more energy than can be used within the development they usually serve, they have the potential to sell electricity to other users. However, the energy market is largely the domain of big, centralised generators, and it is a difficult market for small providers to enter. Obstacles include the requirement for generators to be licensed, and the up-front capital costs of generating capacity.

The GLA, Ofgem and other partners have been creating licensing arrangements to lower the entry barriers for small suppliers, but more

⁵⁰ CCMES, pages 79-81

⁵¹ *Mean, lean and green: powering the Olympic Park*. Olympic Delivery Authority, October 2010. <http://www.london2012.com/documents/general/mean-lean-and-green.pdf>

⁵² 19 May meeting, transcript pages 12-13

work is needed to make the electricity market more favourable to decentralised producers – particularly for them to be able to sell at retail prices to local consumers. The Government proposes to convene a ‘Government Industry Contact Group on Distributed Energy’.⁵³

The issue of capital costs is particularly an issue for district heating (often combined heat and power) schemes. District heating can be particularly effective in densely-built urban areas such as are found in much of London, due to the density of heat demand and the nature of the local building stock and land use.

The underground pipes to carry heat around a district scheme are expensive to install and the up-front investment required presents a significant hurdle for any scheme to overcome. To enable schemes to go ahead, financial support is often required at the initial construction phase.

Efficient district heating offers carbon savings immediately, with scope for more by upgrading to renewable energy sources as these become commercially viable.⁵⁴ It is therefore a strong candidate for public financial support within the market. This public support could add to the future income stream of district heating projects and help them raise commercial finance where they are already close to the threshold of commercial viability. However, district heating only qualifies for subsidy (under the national Renewable Heat Incentive) if it is fully renewable.⁵⁵ Such subsidy is beyond the power of the GLA.

The GLA is therefore seeking further financial support from the Government for distributed energy and in particular district CHP. While the Electricity Market Reform White Paper acknowledged the potential of distributed generation, firm proposals were not included.⁵⁶ It will be important that the Government puts forward concrete proposals as it legislates for key elements of the package in the second session of this Parliament.

⁵³ 19 May meeting, transcript pages 1, 13-14, 16; Electricity Market Reform White Paper pages 93-94, 104-105; see also CCMES pages 79-80 and 84

⁵⁴ CCMES page 81

⁵⁵ 19 May meeting, transcript pages 1, 13-14, 16; Electricity Market Reform White Paper pages 93-94, 104-105; see also CCMES pages 79-80 and 84

⁵⁶ 19 May meeting, transcript pages 13-14, 16; Electricity Market Reform White Paper pages 93-94, 104-105; CCMES pages 96, 104-105

Therefore the specific action sought by the GLA is government support for the initial investment needed by district heating systems, including for those that do not initially run on fully renewable energy.

Recommendation 3

The Government should help to ensure that support is available for close-to-market decentralised energy infrastructure. In particular, it should in 2012 review the Renewable Heat Incentive with a view to including district CHP schemes with partial and/or potential renewable energy sources.

Electricity transmission

Much of the UK's electricity generation is located some distance from the point where it is consumed. This means that much of the UK's electricity must be transmitted from one region to another – for example, from Scotland and the north of England (where there is surplus generation) towards London and surrounding regions (where there is excess demand). This inter-regional transmission is via the national grid of high voltage cables to sub-stations which supply most consumers via lower-voltage distribution networks.

The transmission and distribution networks are built and maintained at a financial and environmental cost, with a proportion of the energy lost in transit. Ofgem is currently reviewing how transmission costs are divided between electricity producers. In particular, it is considering how far charges should be based on the distance of the producer from the main areas where power is consumed.

Distributed generators, supplying electricity to the distribution network for use by consumers on that network, reduce the demands on the national transmission network and so keep down the environmental and financial costs of transmission. They therefore currently face lower connection prices, compared to generators that connect to the transmission network.

Ofgem will, following its main review of transmission costs, review whether this price advantage to distributed generators should continue. National Grid argues that distributed generators should make more of a contribution to transmission costs. Currently, distributed generators are exempt from both the location-related and

flat-rate components of transmission costs. National Grid argues that they should pay the flat-rate component to allow transmission companies (such as National Grid) greater revenue to cover their current costs.⁵⁷ However, as distributed generation supplies local demand with no burden on the transmission network, it seems reasonable that it should be exempt from all the charges for transmission network access.

Imposing transmission network access charges on distributed generators would reduce the viability of many decentralised energy schemes and thereby have an impact on the Mayor's plans for decentralised energy, and on London's ability to contribute to electricity supply. The Committee therefore does not wish to see distributed energy producers face additional costs from any changes arising from this review. It will accordingly consider a submission to Ofgem's consultation at the appropriate time.

⁵⁷ <http://www.nationalgrid.com/NR/rdonlyres/B630B1A6-679B-4D13-8BF8-B597189DB6A1/39333/GBECM23TransmissionArrangementsforDistributedGener.pdf>

Managing electricity demand

Energy efficiency and demand reduction

Demand reduction is a cost-effective way to reduce the energy gap, though it is unlikely to close it altogether in the foreseeable future.⁵⁸ There are many energy-inefficient homes and workplaces in London where low-cost measures can make significant energy savings with rapid payback periods.⁵⁹ Lower consumption reduces the energy gap not only by the reduction in end-point metered use, but also by the energy lost in transmission, distribution and generation or processing.⁶⁰

Furthermore, energy efficiency saves all the carbon emissions associated with the energy not used, making it much more effective as a climate change measure than much of the carbon-emitting generating capacity that would be needed if consumption continued unabated.

Mayoral energy efficiency strategy

Improving energy efficiency to reduce demand is a significant component of the Mayor's Climate Change Mitigation and Energy Strategy.⁶¹ The strategy sets out programmes to fit energy efficiency measures to existing buildings, including:⁶²

- RE:NEW, to advise on and support the installation of energy-saving measures in 2.9 million London homes by 2025
- RE:CONNECT, to bring together local authorities and communities to achieve carbon reductions across the area

⁵⁸ Electricity Market Reform White Paper page 8; see also *The implications of recent UK energy policy for the consumer*, University of Cambridge Electricity Policy Research Group, 2011, page 51 <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2011/05/ReportforCAFinal100511EPRG.pdf> and Environment Committee meeting 3 December 2009, transcript page 5 <http://www.london.gov.uk/moderngov/Data/Environment%20Committee/20091203/Minutes/Transcript%20PDF.pdf>

⁵⁹ CCMES Chapter 5, particularly pages 117-118

⁶⁰ Energy Flow Chart – of the 2010 outflows from power stations, 46.4 mtoe was conversion losses, 4.5 mtoe energy industry use and distribution losses, and 28.2 mtoe was final consumption.

⁶¹ 19 May meeting, transcript page 1; CCMES chapters 5 and 6; 6 April meeting; 1 December 2010 meeting

⁶² CCMES pages 110-111, 122-135, 142, 152-157, and Annex A

- RE:FIT, an innovative commercial model for fitting energy-saving measures in public buildings
- The Better Buildings Partnership, which brings together major commercial landlords, tenants and managers to improve their energy efficiency
- Other support and advice on energy saving to businesses, which has included the 'Green 500' programme and now includes the Mayor of London's Green Awards

An assessment of progress with these programmes is to be explored in more detail in forthcoming meetings of this Committee.

The GLA Group is a significant energy user in its own right, and its efficiency and use of renewable energy also has a carbon impact.

London Underground (LU) in particular is one of the top ten customers for electricity in the UK, using over 1,000 GWh per year – enough to power over 250,000 homes.⁶³ Increasing services will result in increased electricity consumption over the next 20 years.

As a result, London Underground could have strong market leverage due to the large, secure and long-term nature of its demand, as well as its very strong credit position, both of which are highly valued by low-carbon energy generators and their financial backers.⁶⁴ This may enable LU to incentivise the market to accelerate the provision of more good-value and reliable renewable energy, if market providers are prepared to take this up and at an appropriate cost.

The Mayor's current aspiration is for LU to source 30 per cent of its energy from renewables by 2025⁶⁵ – this would be a significant increase from the current 17 per cent.⁶⁶ Work to meet this aspiration has been in preparation for some time. The current 17 per cent represents a 1 percentage point increase since 2008⁶⁷ and the

⁶³ London Underground Environment Strategy 2008-2013, revised 2011. See also London Underground: Facts and Figures
<http://www.tfl.gov.uk/corporate/modesoftransport/londonunderground/1608.aspx>

x

⁶⁴ Mayoral Question 2319/2010, by Mike Tuffrey AM on 14 July 2010

⁶⁵ Mayoral Question 3278/2009, by Mike Tuffrey AM on 18 November 2009, answered in writing on 27 November 2009

⁶⁶ London Underground: Facts and Figures, 'Total electricity supplied'
<http://www.tfl.gov.uk/corporate/modesoftransport/londonunderground/1608.aspx>

x

⁶⁷ Mayoral Question 0103/2008, by Geoff Pope AM, on 30 January 2008

Committee will want to see continued progress towards meeting this goal as soon as is possible and practical.

Recommendation 4

The Mayor should ensure that Transport for London provides (in the next edition of the London Underground Environment Strategy) details on how London Underground will meet or come closer to his aspiration to source 30 per cent of its energy supply from renewable sources by 2025, whilst ensuring value for money. The Mayor should also explore London Underground's strong market leverage potential to further increase this figure.

National energy efficiency policy

There have been nationwide energy-efficiency schemes such as the CERT and CESP programmes, whereby energy companies are obliged to fund energy-efficiency retrofit in homes across the country.⁶⁸ However, as shown in this Committee's report *Lagging Behind*⁶⁹, the energy companies chose to concentrate their provision in parts of the country where installation costs were lower, meaning that London received disproportionately few installations (this has continued in more recent years, as illustrated in the graph on the next page).⁷⁰ The London Assembly has recently unanimously called on the energy companies to fulfil these obligations equally across the UK.⁷¹

⁶⁸ CCMES page 116

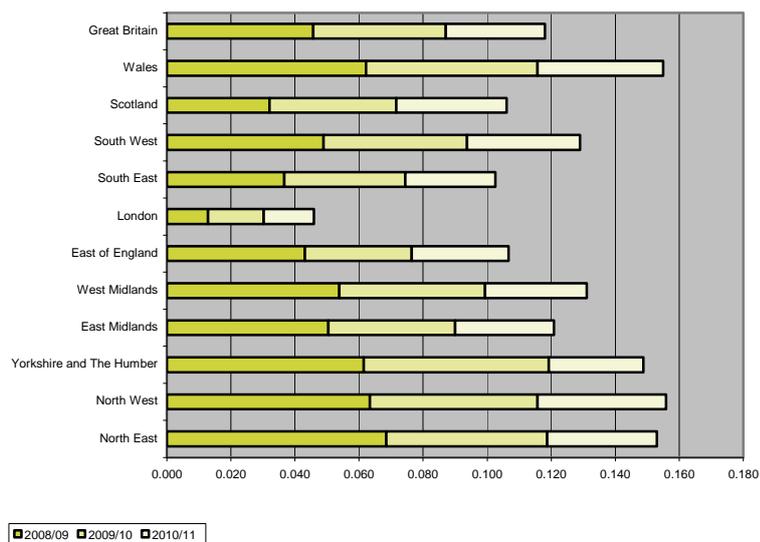
⁶⁹ *Lagging behind – insulating homes in London*, London Assembly, December 2008. <http://www.london.gov.uk/who-runs-london/the-london-assembly/publications/environment/lagging-behind-insulating-homes-london>

⁷⁰ See also CCMES pages 118-119

⁷¹ At the Assembly meeting of 9 November 2011

http://www.london.gov.uk/media/press_releases_london_assembly/assembly-calls-energy-suppliers-act-fuel-poverty

CERT installations per home, by region (loft and cavity wall insulation)



Source: Energy Saving Trust⁷²

The Government is now developing a nationwide domestic energy efficiency retrofit programme called the Green Deal (under the Energy Act 2011).⁷³ This sets up a mechanism by which householders can install energy efficiency measures in their existing homes without having to pay all the costs up front. The Green Deal, including finance, is to be provided by third parties and the money repaid via the savings on energy bills.⁷⁴ Support for vulnerable people and those on low incomes, and for harder-to-fit properties such as those with solid walls, is to be provided by an Energy Company Obligation (ECO), to replace CERT and CESP.

With its provision of advice on energy efficiency, the Green Deal is based on models such as RE:NEW, but there are questions as to whether certain essential features of the RE:NEW model will be embedded in the national Green Deal.

⁷² Data from the Energy Saving Trust
<http://www.energysavingtrust.org.uk/Publications2/Housing-professionals/HEED-PDFs/HEED-publications-for-UK/CERT-summary-report-Q12-by-English-regions-Scotland-and-Wales>

⁷³ Energy Act 2011. <http://services.parliament.uk/bills/2010-11/energyhl.html>

⁷⁴ http://www.decc.gov.uk/en/content/cms/tackling/green_deal/green_deal.aspx

For domestic energy efficiency to achieve the necessary carbon reductions to hit national climate change targets, a large proportion of homes across the country must be reached by the Green Deal, and many of them must install not just the easiest measures such as loft and (where applicable) cavity wall insulation, but also further measures such as solid wall insulation and low-carbon micro-generation.

To drive this level of take-up overall, the experience of RE:NEW shows that it is necessary to combine the easiest measures with those that are more costly into one cost-effective package for the whole building. Homes that take up the easiest measures in isolation initially would be less likely to take up the additional measures later.

The current Green Deal consultation⁷⁵ proposes that the Green Deal itself should be able to include ECO incentives for measures such as solid wall insulation. However, microgeneration is not eligible for ECO support and at current costs is unlikely to qualify for the Green Deal. So it requires funding through the Feed-in Tariff. The consultation envisages that packages including microgeneration could be offered by Green Deal providers, but it appears that financing arrangements for energy efficiency and microgeneration would then be separate, and the microgeneration arrangements could differ significantly between providers – which could make a package including microgeneration more complicated and less likely to be taken up.

RE:NEW also shows that there are significant economies of scale if homes are approached on a systematic area basis – that way, door-to-door promotion can maximise take-up most efficiently, and so fit a number of nearby and similar installations at once.⁷⁶ A systematic area approach can also dovetail with local authority carbon reduction strategies, and can support efforts to tackle fuel poverty.

Omission of these aspects of the RE:NEW model would hamper the aims of the Green Deal nationwide; it would do so particularly in London, which has higher proportions of more challenging housing stock such as solid-walled and private rented properties.⁷⁷

⁷⁵ http://www.decc.gov.uk/en/content/cms/consultations/green_deal/green_deal.aspx; see also <http://www.decc.gov.uk/assets/decc/legislation/energybill/1010-green-deal-summary-proposals.pdf>

⁷⁶ Environment Committee briefing to MPs on Energy Bill, May 2011

⁷⁷ CCMES pages 117-118

Recommendation 5

The Government should adopt the London RE:NEW programme as a model for the Green Deal:

- **the Green Deal should adopt a whole-building approach, offering a simple, cost-effective package of energy efficiency and microgeneration measures**
- **the Green Deal should optimise long-term take-up by ensuring that its market mechanisms incentivise an area approach, including street-by-street promotion and regional targets for the Energy Company Obligation from the outset**

Currently, the Government is minded to restrict eligibility for the Affordable Warmth element of the ECO to properties in private tenures, where the majority of people in fuel poverty live. The intention is to support those homes that are of the lowest average standards of energy performance and which have not previously benefited from the Decent Homes programme⁷⁸ in England. However, the social landlord sector is lobbying for the Affordable Warmth element to be opened to them.⁷⁹

It will be important that Registered Social Landlords are given sufficient subsidy, whether through the ECO, Decent Homes or another means, to reduce their tenants' energy demand.

Recommendation 6

The Government should ensure that Registered Social Landlords are given sufficient subsidy, whether through the ECO, Decent Homes Programme, or other means, to reduce their tenants' energy demand.

⁷⁸ A further £2.1 billion was committed to the Decent Homes Programme in the current spending review period, aimed at bringing the backlog of social housing up to the standard. However, some local authorities, such as Southwark, have been unable to implement stronger energy efficiency standards with the amount of Decent Homes funding available to them. In Sutton, the housing ALMO is looking to finance higher energy efficiency standards by combining the Green Deal, the Feed-in Tariff, the ECO and other sources.

⁷⁹ http://www.housing.org.uk/policy/greener_neighbourhoods/greener_neighbourhoods_news/green_deal_needs_to_work_for_s.aspx

Coping with peaks in demand and drops in supply

Electricity demand varies from time to time during the day, and on longer cycles such as the week and the year. The highest peaks in demand are on winter weekday evenings, when lighting, heating, cooking and other appliances come on in homes. Supply may also drop unexpectedly, for example if a power station suffers a fault.

As mains electricity must be supplied at the instant it is consumed, it is at the time of peak demand that the nation's generating capacity is tested. Therefore, to avoid the threat of an electricity gap, it is peak demand that must be managed.

The Government is consulting on the establishment of a 'capacity mechanism' in the national electricity network.⁸⁰ Central payments would be available to generators or users who could commit to respond to signals from the network to increase generation or hold off demand at exceptional peak times. These payments would compensate for any cost incurred and would enable the installation of appropriate infrastructure to provide this response.

Traditionally, the expectation has been that this mechanism would involve central generating capacity, built at great cost but not usually used. However, it can be equally effective if the mechanism uses demand reduction or distributed generation – these forms are known together as 'demand-side response'. As this report has highlighted, demand reduction and distributed generation are at the heart of London's energy strategy and elements of London's strategy would be well-placed to take advantage of capacity mechanism payments – especially in future as 'smart grid' technology enables more and more devices that use or supply electricity to respond to automatic signals of demand from the networks to which they connect.

Recommendation 7

The Government should use energy market reform measures, in particular the Capacity Mechanism on which the White Paper consults, to ensure there are revenue streams to incentivise and enable 'demand-side response', including local generation, to relieve the load on the national grid at peak times.

⁸⁰ Energy Market Reform White Paper chapter 3 – see particularly pages 77-78

Appendix 1 Recommendations

Recommendation 1

The Mayor should:

- set out how grid connections for waste to energy generators will be financed in London
- give a clear specification of the expectations, responsibility and accountability of partners involved in delivering the Mayor's waste strategies and in particular the waste-to-energy elements

Recommendation 2

LWaRB should:

- collate information on the waste disposal contracts that boroughs have entered into
- provide advice to boroughs on how to ensure that they will generate the waste streams necessary to support new waste to energy plants

Recommendation 3

The Government should help to ensure that support is available for close-to-market decentralised energy infrastructure. In particular, it should in 2012 review the Renewable Heat Incentive with a view to including district CHP schemes with partial and/or potential renewable energy sources.

Recommendation 4

The Mayor should ensure that Transport for London provides (in the next edition of the London Underground Environment Strategy) details on how London Underground will meet or come closer to his aspiration to source 30 per cent of its energy supply from renewable sources by 2025, whilst ensuring value for money. The Mayor should also explore London Underground's strong market leverage potential to further increase this figure.

Recommendation 5

The Government should adopt the London RE:NEW programme as a model for the Green Deal:

- the Green Deal should adopt a whole-building approach, offering a simple, cost-effective package of energy efficiency and microgeneration measures
- the Green Deal should optimise long-term take-up by ensuring that its market mechanisms incentivise an area

approach, including street-by-street promotion and regional targets for the Energy Company Obligation from the outset

Recommendation 6

The Government should ensure that Registered Social Landlords are given sufficient subsidy, whether through the ECO, Decent Homes Programme, or other means, to reduce their tenants' energy demand.

Recommendation 7

The Government should use energy market reform measures, in particular the Capacity Mechanism on which the White Paper consults, to ensure there are revenue streams to incentivise and enable 'demand-side response', including local generation, to relieve the load on the national grid at peak times.

Appendix 2 Letter to the Secretary of State

Dear Secretary of State,

London and national energy strategies

The London Assembly Environment Committee has recently agreed a report on national and London energy policy, *Plugging the Gap* (a copy is enclosed for your reference). This report notes the scale and speed of the investment necessary, in both energy generation and energy efficiency, to meet carbon-reduction targets, to secure the UK's energy supply and in particular to ensure that there is not a gap between electricity supply and demand in the UK grid.

London, which is responsible for 13 per cent of the UK's electricity consumption but currently has only about 2 per cent of its generating capacity, must play a major role in these efforts. The Mayor of London has recently published his statutory Climate Change Mitigation and Energy Strategy, setting out ambitious goals to improve London's energy efficiency, to significantly increase London's electricity generation, and to cut London's carbon emissions.

The Committee's report analyses the Mayor's strategy and national policies, including the recent Energy Market Reform White Paper and the current Green Deal proposals. It makes recommendations to the Mayor and to Mayoral bodies, but significantly it also finds that there are a number of ways in which national policies could be improved to work better alongside the Mayor of London's strategy.

Decentralised energy generation

The Mayor's strategy proposes that 25 per cent of London's energy needs (over 2 per cent of all UK energy needs) should be met by decentralised energy generation within London by 2025. The bulk of this would come from medium and large-scale combined heat and power projects, requiring district-scale or wider heat pipe networks.

There has been considerable discussion of the potential of heat pump technology. However, in urban areas like inner London, district heating may often be a more efficient option. Much of London's building stock is not yet heat-efficient enough to allow heat pumps to operate most effectively, and ground-source heat pumps need an area of land in which to bury their source pipes - in short supply in heavily built-up areas. Conversely, district heating is particularly efficient where there is a high density of heat demand.

Therefore, district heating is an efficient and lower-carbon option in many cases in London, including where the initial heat source includes a modern conventional power plant with heat recovery. Installing district heat networks in the short to medium term, using conventional generation, is important to the rapid roll-out of lower-carbon heat, and provides a ready infrastructure into which renewable or other advanced generators can be installed as the technologies come to maturity.

However, the initial capital costs of installing district heat pipe networks provide an important entry barrier. The financial support offered by the Renewable Heat Incentive (RHI) would significantly help to overcome this, but renewable district heat networks are not yet ready to go ahead at sufficient scale. Therefore, the report recommends that RHI support be offered to district heat and power schemes that use some renewable energy or could do so in future.

Report recommendation 3: The Government should help to ensure that support is available for close-to-market decentralised energy infrastructure. In particular, it should in 2012 review the Renewable Heat Incentive with a view to including district CHP schemes with partial and/or potential renewable energy sources.

Energy efficiency and the Green Deal

The Committee welcomes the proposed Green Deal scheme, which will make a major contribution towards climate change targets. The GLA has developed an effective programme for promoting the take-up of domestic energy efficiency and low-carbon microgeneration retrofitting - the RE:NEW scheme. This has provided an important model for the Government's Green Deal programme, but it appears that crucial aspects are not yet fully included in the proposals - the whole-house approach and street-by-street promotion with strategic targets.

Without a whole-house approach, take-up of more advanced measures and in particular microgeneration is unlikely to be sufficient to enable the Green Deal to achieve the necessary carbon savings. It does not appear from the current Green Deal consultation that the financing of microgeneration measures will be included within the Green Deal. If it is left to individual providers whether and how to install and/or finance microgeneration alongside a Green Deal package, consumers will face very complex options, and difficulty

comparing providers that may differ on both price and finance arrangements. This seems likely to deter the take-up of renewable microgeneration.

London's experience with RE:NEW also shows the benefits of a street-by-street promotional strategy, both in maximising take-up among households that are not natural first adopters, and in achieving economies of scale by concurrently retrofitting a number of properties of similar type in one location. This targeted approach also offers the potential to dovetail with local authority carbon-reduction strategies and with crucial efforts to tackle fuel poverty.

London has received a far less than proportionate share of energy efficiency works under the CERT scheme over the past four years. The London Assembly has unanimously called for energy companies to fulfill these obligations equally across the UK, but CERT is soon to be replaced by the ECO. It is important that regional targets are applied to the ECO from the outset, so that London's large share of the country's solid-wall properties and fuel-poor households are adequately reached.

Report recommendation 5: The Government should adopt the London RE:NEW programme as a model for the Green Deal:

- the Green Deal should adopt a whole-building approach, offering a simple, cost-effective package of energy efficiency and microgeneration measures
- the Green Deal should optimise long-term take-up by ensuring that its market mechanisms incentivise an area approach, including street-by-street promotion and regional targets for the Energy Company Obligation from the outset

The Committee is aware of campaigns from the social housing sector for ECO to be made available to properties in that sector. It is important that energy efficiency measures reach all types of housing.

Report recommendation 6: The Government should ensure that Registered Social Landlords are given sufficient subsidy, whether through the ECO, Decent Homes Programme, or other means, to reduce their tenants' energy demand

The Capacity Mechanism

The Committee also wishes to input on the consultation opened in the Energy Market Reform White Paper on the Capacity Mechanism. To hold a reserve of additional generating capacity, normally standing unused, would be very costly, and would require that the national transmission infrastructure likewise be maintained at a greater capacity. However, to use a capacity mechanism on the 'demand side', including responsive deferral of consumption by certain users and despatchable distributed generation, would not require the same investment in peak-demand-only infrastructure and would help to support new technologies and other low-carbon investment, and contribute to the establishment of the UK smart grid.

Report recommendation 7: The Government should use energy market reform measures, in particular the Capacity Mechanism on which the White Paper consults, to ensure there are revenue streams to incentivise and enable 'demand-side response', including local generation, to relieve the load on the national grid at peak times

Appendix 3 Orders and translations

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Chinese

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Vietnamese

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

Greek

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

Turkish

Bu belgenin kendi dilinize çevrilmiş bir özetini okumak isterseniz, lütfen yukarıdaki telefon numarasını arayın, veya posta ya da e-posta adresi aracılığıyla bizimle temasa geçin.

Punjabi

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

Hindi

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

Bengali

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

Urdu

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

Arabic

الوصول على ملخص لهذا المستند بلغتك،
فارجاء الاتصال برقم الهاتف أو الاتصال على
العنوان البريدي العادي أو عنوان البريدي
الالكتروني أعلاه.

Gujarati

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

Appendix 4 Evidence for the investigation

The work behind this report

The report draws on discussions the Committee has had during 2011 with Mayoral agencies and with energy producers⁸¹, on information received in correspondence with the Mayor's Director of Environment and Digital London,⁸² and on analysis of London and national policy documents such as the Mayor's Climate Change Mitigation and Energy Strategy, the Government's recent White Paper *Planning our electric future: a White Paper for secure, affordable and low-carbon electricity*, and the current Government consultation on the Green Deal scheme.

The Environment Committee took views and information upon which this report is based from guests at its meetings on 6 April and 19 May 2011. Organisations meeting with the Committee were:

- Greater London Authority
- London Development Agency
- London Waste and Recycling Board
- London Array
- Association of Energy Producers

The 6 April meeting discussed the future of the London Development Agency's environment work, including projects since taken forward by the GLA such as RE:NEW and support for decentralised energy and energy from waste, with Isabel Dedring (then Mayor's Adviser for Environment), Martin Powell (LDA Director of Environment and Capital Projects and Mayor's Interim Adviser for Environment) and Emma Strain (LDA Head of Environment).

The 19 May meeting heard about the London Array from Richard Rigg, its Project Director, and discussed London's energy gap with Richard Rigg and with Alastair Tolley, Head of Renewable Energy at the Association of Energy Producers, Peter Daw, Policy and Programmes Manager, Climate Change Mitigation at the GLA, and Ross Hudson, Environment Programme Officer, Low Carbon Zones at the GLA.

⁸¹ 19 May meeting and meeting of the Environment Committee on 6 April 2011 (hereafter referred to as 6 April meeting - transcript at <http://www.london.gov.uk/moderngov/mgConvert2PDF.aspx?ID=4667&T=9>). See also Appendix 5 of this report for meeting details.

⁸² Letter from Mayor's Director of Environment and Digital London to Chair of Environment Committee, 3 August 2011 <http://www.london.gov.uk/moderngov/mgConvert2PDF.aspx?ID=5676>

This report also builds on previous work by this Committee on energy and climate change mitigation. Since the publication of the previous Mayor's Energy Strategy, the Committee has published three reports on energy supply:

- *Power to the people* – on domestic renewable energy, in April 2005⁸³
- *Emission creep* – on energy efficiency (and microgeneration) in public buildings, in December 2007⁸⁴
- *Where there's muck there's brass* – on energy from waste, in September 2009⁸⁵

The Committee has also responded to Mayoral and other publications and consultations:

- A response to the low-carbon economy chapter of the Mayor's Economic Development Strategy, and the Mayor's Low Carbon Capital prospectus, in June 2009⁸⁶
- A response to the Mayor's first consultation on his draft Climate Change and Energy Strategy (CCMES), in March 2010⁸⁷
- A further response to the public consultation on the CCMES, in March 2011⁸⁸
- A briefing to MPs on the Energy Bill (now the Energy Act 2011), in June 2011⁸⁹.

⁸³ <http://www.london.gov.uk/who-runs-london/the-london-assembly/publications/environment/power-people>

⁸⁴ <http://www.london.gov.uk/who-runs-london/the-london-assembly/publications/environment/emission-creep-0>

⁸⁵ <http://www.london.gov.uk/who-runs-london/the-london-assembly/publications/environment/where-theres-muck-theres-brass>

⁸⁶ <http://www.london.gov.uk/archive/assembly/reports/environment/econ-dev-responses-lcc09.pdf>

⁸⁷ <http://www.london.gov.uk/who-runs-london/the-london-assembly/publications/environment/climate-mitigation>

⁸⁸ <http://www.london.gov.uk/publication/london-assembly-response-public-consultation-draft-mayors-climate-change-mitigation-and-0>

⁸⁹ <http://www.london.gov.uk/publication/environment-committee-paper-energy-bill>

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