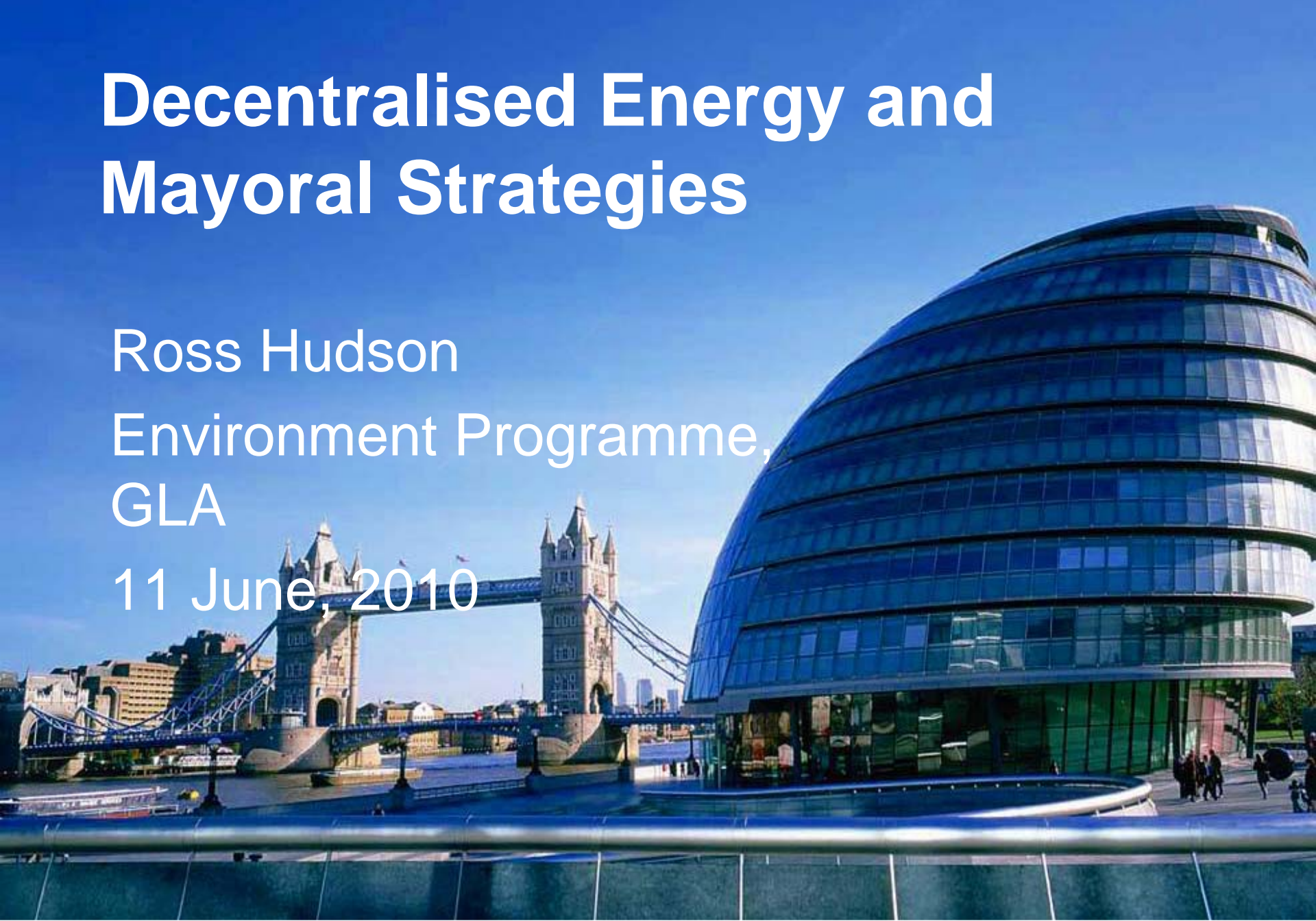


Decentralised Energy and Mayoral Strategies

Ross Hudson

Environment Programme,
GLA

11 June, 2010





Climate Change Mitigation & Energy Strategy

London Plan

DEMaP and the role of boroughs

London Targets & Strategies

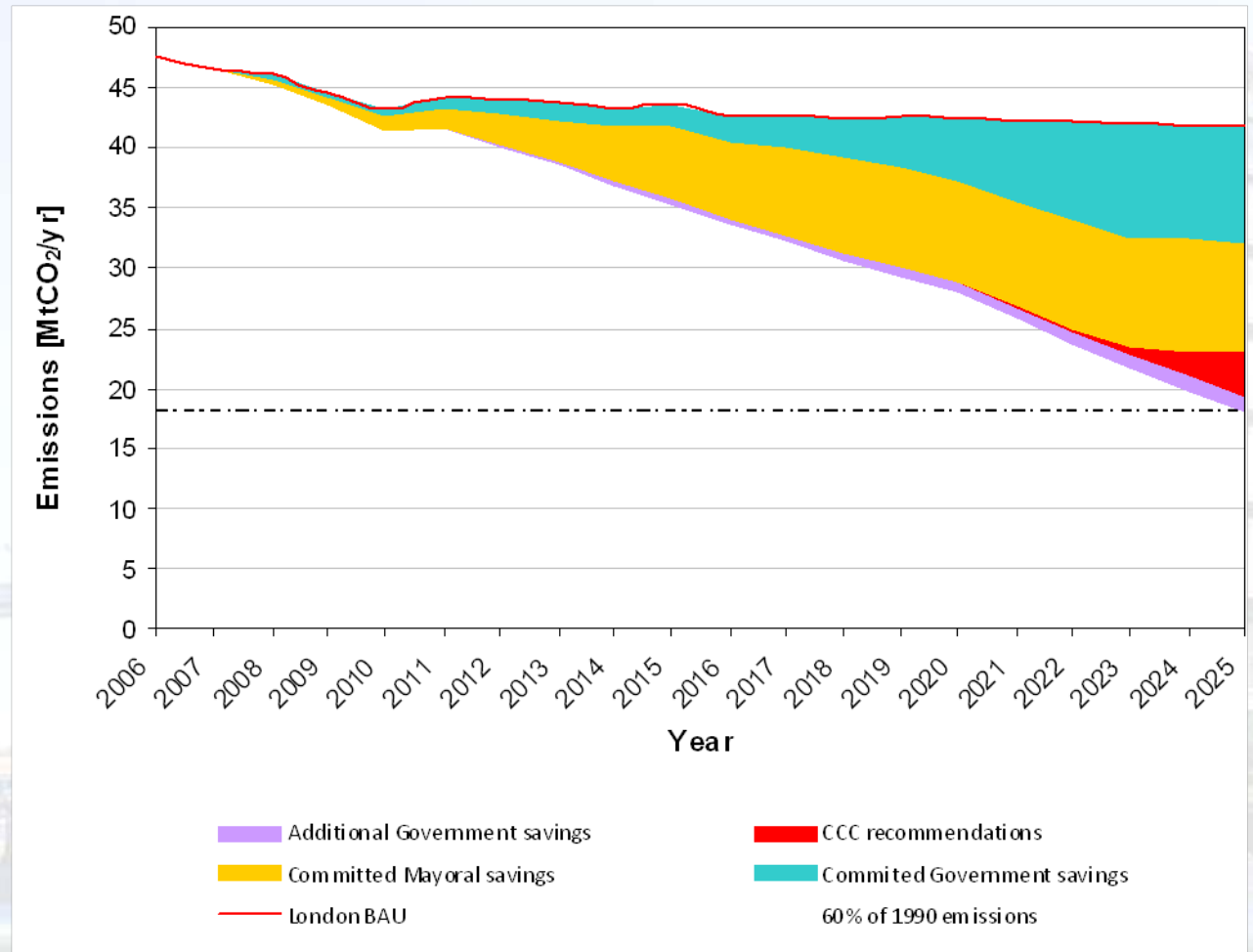
- 60% reduction in London's CO₂ emissions by 2025
- 25% of London's energy for decentralised sources by 2025
- Emerging targets for installed Renewables
- Climate Change Mitigation & Energy Strategy
 - Public consultation: July, Final version: Jan 2011
- Draft Replacement London Plan
 - Examination in Public (Energy - 15th/16th July)
 - Adoption in winter 2011

Reducing London's CO₂ emissions

Reductions from 5 sources:

1. Business as Usual
2. Government action already committed through the Low Carbon Transition Plan
3. Mayoral/London action committed through Strategy
4. Implementation of recommendations of the Committee on Climate Change by Government
5. Additional savings required

In total, with first 4 sources, CO₂ emissions are reduced by 23.64 MtCO₂ by 2025 (a 57% reduction.)



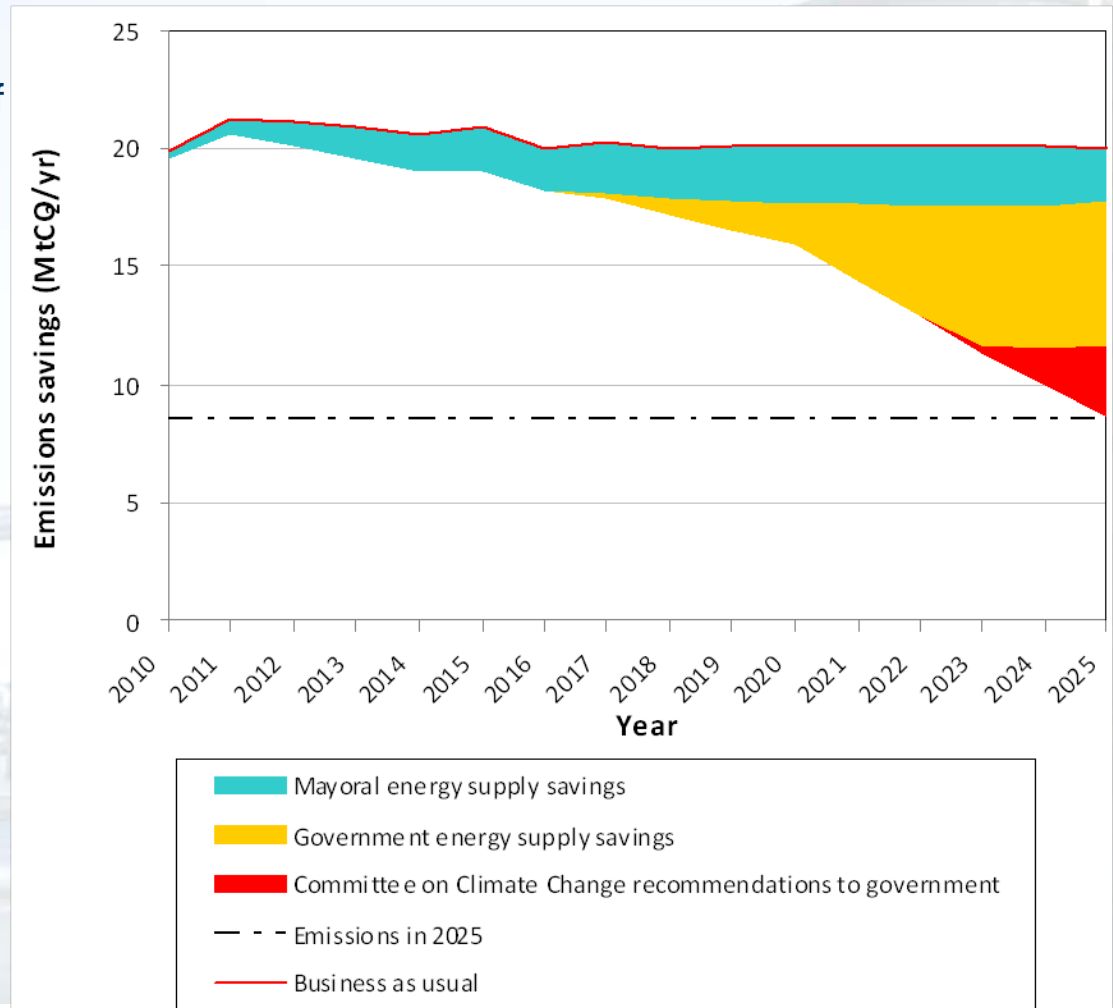
Securing a low carbon energy supply for London: CO₂ emissions reductions

Overall reduction in CO₂ emissions of 11.6 MtCO₂ by 2025

Government policies = 6.1 MtCO₂

Committee on Climate Change recommendations = 3 MtCO₂

Mayoral policies = 2.5 MtCO₂



National Action for Low Carbon Supply

- National Renewable Energy Strategy 2009 – renewable energy (electricity + heat) target of 15% by 2020 + Low Carbon Transition Plan
- De-carbonisation of the electricity grid: gas, nuclear, wind, CCS
- Renewable heat (large scale): biomass, waste to energy, biogas (crops)
 - Low/Zero carbon gas injected into gas grid?
- Micro-generation: heat pumps, solar heating, PV
- Committee on Climate Change recommends in addition–
 - 23GW wind capacity, 4 new CCS plants, 3 new nuclear power stations
- Are the above most cost effective solutions? value in directing support to CHP + heat networks

Role of DE

- Rationale for DE – cost and carbon efficient when delivered at sufficient scale
- Complementary to grid de-carbonisation
- Efficient use of lower carbon gas in medium term ...greener gas supply?
- CHP + heat networks = generation + distribution infrastructure that facilitates transition to zero carbon supply
- Utilise London's indigenous renewable resources, especially waste

Regional/ Local Policy Drivers

- National Indicators 185 (Percentage CO₂ reduction from LA operations) and 186 (Per Capita CO₂ emissions in the local area)
- Carbon Reduction Commitment (CRC) – upgrade existing communal plant, connection to wider network
- London Plan - Opportunity Area Planning Frameworks (OAPFs) and Local Development Frameworks (LDF)
 - (increasingly supported by CLG via PPS, CSH – definition of zero carbon)
- Mayor's Climate Change Mitigation and Energy Strategy

Securing a low carbon energy supply for London: Policies and programme

Mayor's policies

Policy 4 - Delivering decentralised energy through the planning system

Policy 5 - Enabling identification & development of DE opportunities

Policy 6 – Commercialisation of the DE market in London

The Mayor's programmes to deliver this are:

- Planning decisions + strategic planning – London Plan + support for DE via LDFs
- London Heat Map – web-based, interactive GIS tool to identify DE opportunities
- Dedicated centre of expertise – LDA providing strategic guidance and support on DE
- The Decentralised Energy Masterplanning Programme – offering a comprehensive package of support to boroughs, helping them identify and develop decentralised energy projects.
- Co-development of exemplar projects – London Thames Gateway Heat Network
- London Green Fund – Up to £64 million for DE infrastructure + leverage of external funds (Green Investment Bank?)

Draft replacement London Plan

Draft replacement London Plan - ambitious CO₂ reduction targets for new development, leading to zero carbon residential buildings from 2016 and zero carbon non-domestic buildings from 2019.

Requires all proposals to include a energy assessment

Prescribes a hierarchy of measures to reduce emissions

External report: between Nov 2006 and June 2009: on a sample of 147 planning applications, 94 CHP systems secured equivalent to over 20 MWe

Residential

Year	Improvement on 2006 Building Regulations*
2010 - 2013	44 per cent
2013 - 2016	55 per cent
2016 - 2031	Zero carbon

Non-Residential

Year	Improvement on 2006 Building Regulations**
2010 - 2013	44 per cent
2013 - 2016	55 per cent
2016 - 2019	As per new building regulations requirements (expected in 2014)
2019 - 2031	Zero carbon

Decentralised Energy Networks

Policy 5.5

LDF preparation

B Within LDFs boroughs should develop policies and proposals to identify and establish decentralised energy network opportunities. Boroughs may choose to develop this as a supplementary planning document and work jointly with neighbouring boroughs to realise wider decentralised energy network opportunities. As a minimum boroughs should:

- a Identify and safeguard existing heating and cooling networks
- b Identify opportunities for expanding existing networks and establishing new networks. Boroughs should use the London Heat Map tool and consider any new developments, planned major

infrastructure works and energy supply opportunities which may arise

- c Develop energy master plans for specific decentralised energy opportunities which identify:
 - major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing)
 - major heat supply plant
 - possible opportunities to utilise energy from waste
 - possible heating and cooling network routes
 - implementation options for delivering feasible projects, considering issues of procurement, funding and risk and the role of the public sector.
- d Require developers to prioritise connection to existing or planned decentralised energy networks where feasible.

Funding DE through planning

- Policy 5.23 - where carbon targets cannot be met onsite, shortfalls may be provided offsite or through a cash in lieu contribution to the relevant borough for CO₂ reductions elsewhere
- Definition of Zero Carbon Homes/Buildings (consultation) — allowable solutions may include export of low carbon and renewable heat and investments in low and zero carbon community heat infrastructure
- Possibilities in London for strategic applications + consistent process from 2013 (off-set between 44% and 55%?)
- What process? What %? What price? What for?

Funding DE through planning...

- Community Infrastructure levy (CIL) – heat networks identified as fundable infrastructure
- Quantifying DH infrastructure costs and identification of projects to fund essential - via borough DE masterplan
- CIL + allowable solutions only ever likely to part fund a network...
- Requirement to develop projects and associated infrastructure such that they are financially attractive to public/private investors

Working with Government

A regulatory and fiscal framework favourable to DE:

- Direct funding for or investment in heat network infrastructure (Green Investment Bank?)
- Planning Policy Statement 1, 'Planning authorities should give positive consideration to the use of LDOs to secure renewable and low-carbon energy supply systems.'
- Statutory undertaking rights for pipework
- RHI - exemption from supplier levy + fewer restrictions on network support (support for low C heat if connected?)
- Info on boilers >500kwt made public
- Changes to electricity supply licence arrangements

Project development is key role of local and regional authorities

- London Heat Map
- DEMaP 'heat mapping' + feasibility work
- Recognition that borough officers are key to project development and buy-in of decision-makers – politicians, LSP, tie-in of developers
- Commitment of public sector heat loads to 'anchor' DE projects
- Development of delivery mechanisms/vehicles - innovation
- Developing 'a pipeline of projects' that are investable, create economies of scale
- London Green Fund + Green Investment Bank + Private sector = Investment in DE/DH infrastructure