



City of Westminster

Westminster's Energy Challenges and Opportunities

Joe Baker

Go Green Programme Manager

City of Westminster



Population and Society

- 244,400 residential population (ONS, MYE 2005)
- Wide range of projections in future growth of the population to 2016 to between 301,000 to 350,000
- 150 languages spoken
- 50% adult population educated to degree level but 12% of residents have no educational qualifications
- Average house price in Westminster is £590,000 yet Westminster is the 39th most deprived out of 354 local authority districts in England

Employment and economic activity

- Largest employment centre in the UK - 550,000 jobs (14% of all London's jobs) & 47,000 businesses
- GDP of £16 billion
- 9 million sqm office floorspace - largest office centre in UK
- 8,500 retail premises - 2.2 million sqm retail space
- 26.3 million visitors in 2005 - 430 hotels - 40% London's hotel stock
- 38 theatres, 60 cinema screens, 18 casinos & over 3,000 eating, drinking or nightlife establishments



City of Westminster



Development Activity

- Busiest planning authority in UK - 10,000 applications a year

Heritage

- 55 conservation areas (78% of Westminster's area) & over 11,000 listed buildings
- 1 World Heritage Site, 5 Royal Parks & 21 historic squares and gardens

Housing

- Stock 115,600 residential units - split 35% owner occupied, 36% private rented and 29% social housing
- 9,639 new units built between 1997-2005/6

Transport

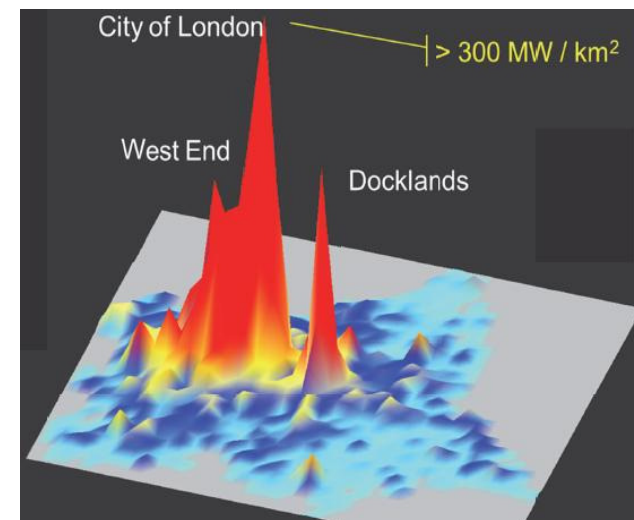
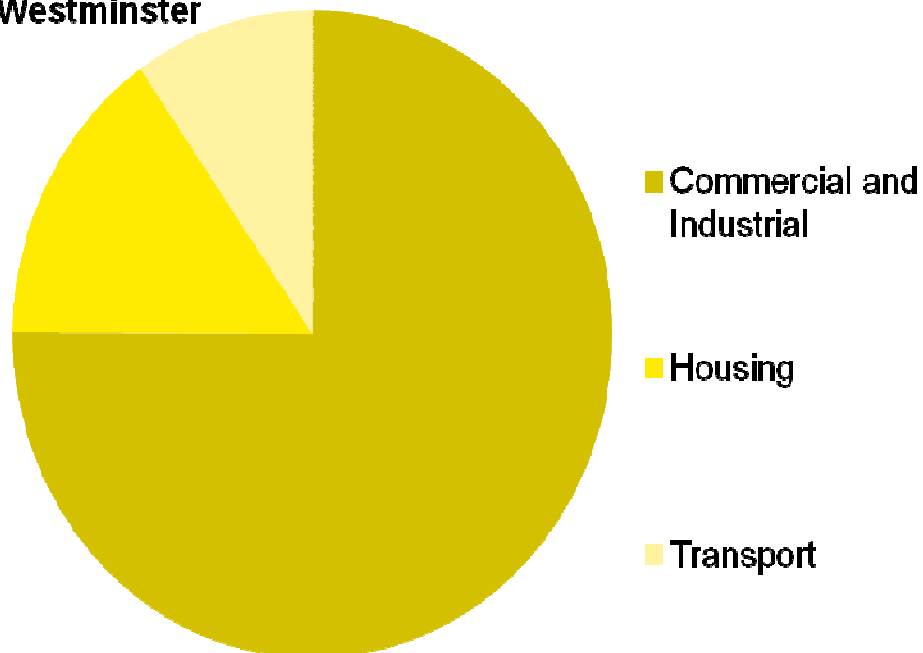
- 4 main line stations with direct airport connections to Paddington and Victoria. Victoria alone has 76.5 million passengers a year
- 10 out of 12 underground lines & 79 bus routes
- Proposed Crossrail 1 & 2 routes & Cross River Tram
- Intense pedestrian activity e.g. 250,000 movements through Leicester Square each day



Westminster Carbon Emissions

- While nationally buildings account for around 45% of carbon emissions in Westminster the figure is much higher
- Security of Energy supply is a priority for developers and businesses

2011 CO2 emissions by source, City of Westminster



Energy demand across London



National Policy

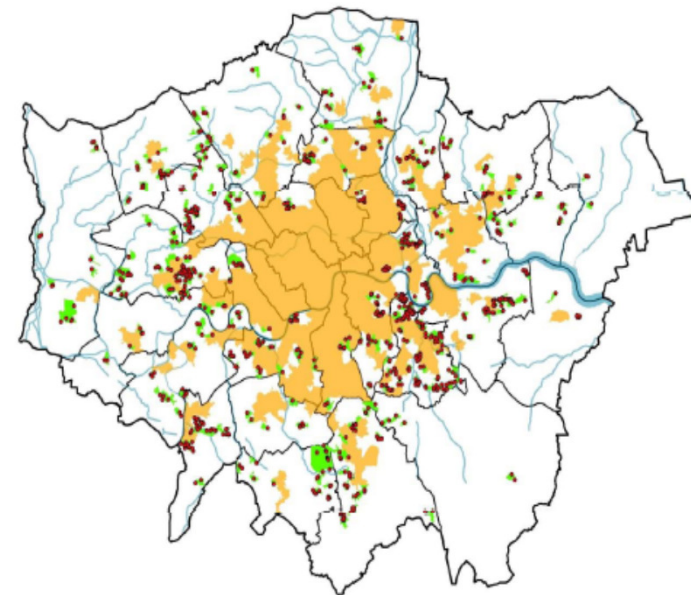


Issues: Difficult to access national funding streams

- % of homes improved by CERT funding: **378/379**
- Number of PV systems installed per dwelling funded by Feed in Tariff: **380/380**
- Warmfront funding per dwelling (designed to tackle Fuel Poverty between 2008 and 2012): **322/326**
- Over the last 8 years, the council has implemented £20m+ of energy improvements in housing. But it would need to do this every year for the next 40 years if Westminster is going to deliver in line with government targets.
- The council's work in this area has largely been limited to projects affecting council housing and has been mostly driven by external grant funding.



Issues - Solid Wall Insulation or District Energy?



Legend

- MSOAs above minimum heat demand density threshold
- Anchor heat loads within LSOAs above minimum heat demand density threshold
- LSOAs above minimum heat demand density threshold, containing or adjacent to such containing anchor heat load(s)



0 2.5 5 10
km

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. (LA100032379)



City of Westminster



Issues: Delivering Energy Efficiency

- **Funding**
- **Assembling projects** – Complexity of signing up all occupiers in flats, or all properties in a row of terraces within a conservation area, required to preserve a unified character and for planning permission.
- **Recharging** – leases often silent on the freeholder's ability to recharge for improvements.

However

- The Energy Company Obligation (ECO) is designed to target 'hard to treat buildings' (e.g. those with solid walls) and deliver district heating. It is therefore better suited for Westminster.
- As a landlord the Council has a lot of post-war purpose built flats with improvement clauses, which have greater potential subject to availability of funding.





Issues: Delivering District Energy

- **Funding** - The cost of delivering district energy is high, but our masterplan shows that the scheme would generate revenues meaning it could attract investment and highlights that there are existing external funding streams that could be used to subsidise delivery.
- **Relatively easier to coordinate** compared to energy efficiency (although implementing a new utility is a considerable endeavour);
- **High carbon savings** – due to the efficiency of gas combustion in CHP
- **Having a less intrusive design** and therefore continue to preserve heritage and visual amenity;

However

- **Impact against wider objectives** - Doesn't necessarily deliver fuel poverty, health, carbon reduction, air quality and energy efficiency.



Opportunities: Policy and pre-app discussion
Westminster's City Plan: Strategic Policies, S28 Design - 'Exemplary Standards of Sustainable and Inclusive Design'
Policy development focus on bringing together heritage and environmental considerations.

London Plan policy 5.2 – 40% carbon reduction target – *or offsetting via local authority.*



LSE Saw Swee Hock Student Centre,
BREEAM 'Outstanding'

Typically major development –
comfortably exceeds BREEAM
Excellent/Code Sustainable Homes level

4



City of Westminster

Opportunities: Westminster's Local Carbon Fund

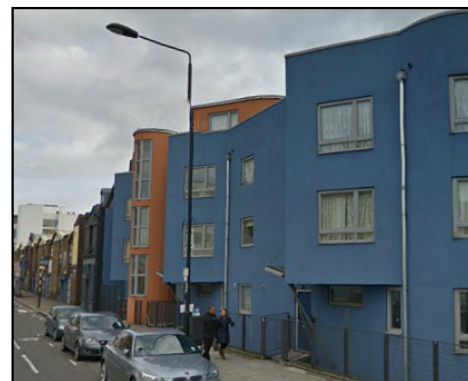


Abbey Centre, Westminster

- Energy Bills are currently approx £19k p.a.
- Investment of £90k will deliver savings
 - Boiler upgrade
 - Increased insulation
 - Renewable Energy
 - Lighting upgrade
 - New equipment on cooling
- Education programme and signage
- Reduction of £8k p.a. on bills

Steve Biko Court, Westminster

- Residential leaders wanted to deliver a community solar project.
- London and Quadrant Housing undertook a feasibility study and costings.
- Westminster City Council will fund the solar panels and L&Q to funding installation.
- Power and Feed In Tariff payments will go to shared areas and the resident group.



Grosvenor properties in Passmore Street...



Two of the 5
planned
Passivhaus
EnerPHit
projects are on
Passmore
Street.



City of Westminster

Go Green – Retrofitting Guidance

Property 3

Victorian Terrace House Outside Conversation Area

-  Energy efficiency
-  Reducing the risk of overheating
-  Low carbon and renewable energy
-  Water efficiency and managing surface-water run off
-  Waste reduction, reuse and recycling
-  Biodiversity



- Modelling of Retrofitting Environmental Technologies
- Based on 3 common property types

Heading	Feature	Planning Considerations	SPD reference
 Low carbon and renewable energy	1. PV solar solar panels	Solar panels on existing stone walls, front wall or rear	
	2. Water heating solar panels	Solar panels on existing stone wall and front wall or rear	
	3. Solar Controlled and Power (SCP)		
	4. Ground source heat pump or air source heat pump		
 Water efficiency and managing surface-water run off	1. Water-efficient toilets and fittings		
	2. High efficiency white goods		
	3. Water meter		
	4. Rainwater harvesting tanks		
	5. Rainwater harvesting tanks		
	6. Wildlife garden		
	7. Permeable paving and surfaces		
	8. Long walls		
 Waste reduction, reuse and recycling	1. Space for waste and recycling storage		
	2. Composter		
 Biodiversity	1. Balcony		
	2. Balcony		
	3. Long walls		
	4. Long walls		
	5. Wildlife garden		

Every planning application may be subject to a search for other listed or other listed buildings. Any listed buildings should be identified with a Design and Conservation Officer prior to submission.



Go Green – Allowable Solutions Fund & Off Setting Emissions



Solar panels integrated into a Mansard Roof


- Expecting new developments to achieve maximum energy saving and generation
- Setting of zero carbon development policy in the City Plan
- Undertaken a cost of a tonne of carbon study
- Offsetting to achieve policy (if needed)
- Developing a local energy fund to deliver projects





Future challenges and work areas..?

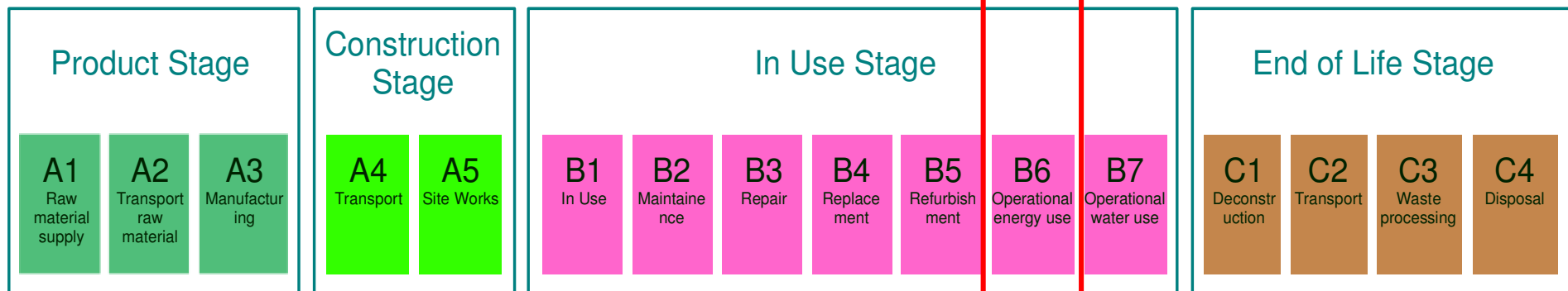


- 
- Councils will not be able to set planning policy relating to **energy** for residential developments.
 - Allowable Solutions will be the route to zero carbon (with on site delivery set at the equivalent of CSH level 4, with offsetting allowed up to the level of CSH 5).
 - ‘Smaller sites’ will be exempt.
 - Planned introduction of CIL from April 2015, with associated scaling back of S106 planning obligations.’
 - Carbon Fund and price of carbon



What's your view? Operational Carbon, covered by energy strategies is only part of the overall 'whole life' carbon emissions picture – should we include embodied carbon?

Part L



BS EN 15978



What's your view? Overheating Risk





Next Steps

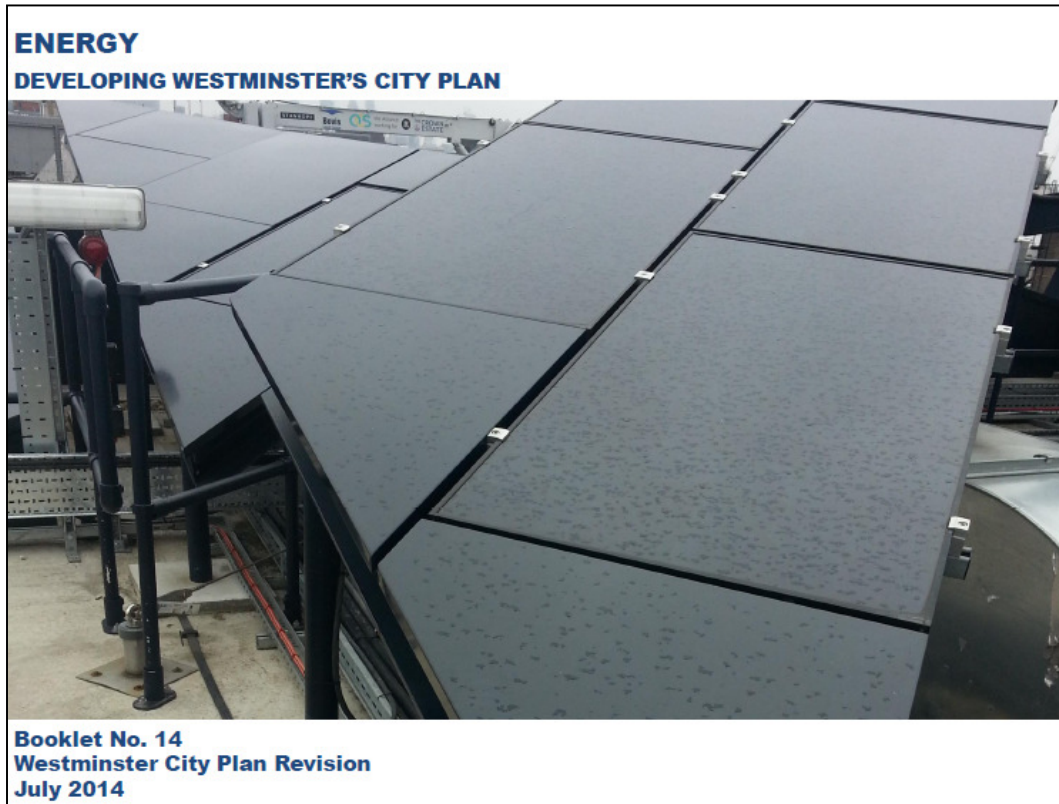




- **Continuing to working with industry**
- **Policy development**
- **Enlarging Pimlico District Heating Undertaking through our DE Masterplan**
- **Undertaking carbon reduction projects**
- **Local carbon fund**



We seek your views....



City of Westminster