

Energy Strategy

Overview

Key Objectives

All residential buildings from 2016 and all non-domestic buildings from 2019 must be zero carbon; and

All buildings must reduce carbon dioxide emissions in accordance with the energy hierarchy of using less energy, supplying energy efficiently and using renewable energy.

10.1 This chapter sets out what improvements to the transport network will be necessary to support development. These include improvements to the public realm to encourage walking, improved cycle facilities and increased capacity on the public transport and road networks. This chapter is informed by a Strategic Transport Study, a review of which can be found on the authorities' websites.

11.1 This chapter sets out requirements to ensure that new development in the OA achieves high environmental standards by reducing carbon dioxide emissions and ~~implementing an energy strategy~~, in accordance with the energy hierarchy, set out in the Mayor's London Plan (2011), of:

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1. Be lean (use less energy);
2. Be clean (supply energy efficiently); and
3. Be green (use renewable energy).

11.2 The final section addresses the requirements of the energy assessment that must accompany any application.

Context

11.3 The Climate Change Act 2008 requires a reduction in carbon dioxide emissions of at least 26% by 2020 and 60% by 2050, against a 1990 baseline. The Government has recently increased this target to 80% by 2050, which will require far more ~~stringent~~ measures to reduce carbon dioxide emissions.

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11.4 The draft National Planning Policy Framework states that the planning system should aim to "secure, consistent with the Government's published objectives, radical

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reductions in greenhouse gas emissions, through the appropriate location and layout of new development, and active support for energy efficiency improvements to existing buildings and the delivery of renewable and low-carbon energy infrastructure”.

11.5 GLA monitoring data shows that in 2008, 43% of carbon dioxide emissions in London were from the workplace, 36% from homes and 21% from transport. Measures to reduce emissions in London are outlined in the Mayor of London's Climate Change Mitigation and Energy Strategy (September 2011). Reducing emissions from workplaces and homes can make a significant reduction in carbon emissions and contribute to meeting London's and the UK's climate mitigation targets.

Policy Context

11.6 The Mayor's London Plan (2011):

'Climate Change Mitigation' (Policy 5.1);
'Minimising Carbon Dioxide Emissions' (Policy 5.2);
'Sustainable Design and Construction' (Policy 5.3);
'Decentralised Energy Networks' (Policy 5.5);,
'Decentralised Energy in Development Proposals' (Policy 5.6);
'Renewable Energy' (Policy 5.7), and
'Overheating and Cooling' (Policy 5.8).

11.7 LBHF's Core Strategy (2011):

'Strategic Site and Housing Regeneration Area – FRA 1'; and
'Reduce Carbon Emissions and Resource Use and adapt to Climate Change Impacts' (Policy CC1).

11.8 RBKC's Core Strategy (2010):

'Earl's Court' (Policy CP10 and associated Vision);
'Earl's Court Exhibition Centre Strategic Site' (Policy CA7); and
'Climate Change' (Policy CE1).

Using Less Energy

Key Principle ENE1:

Each phase of development must meet the carbon reduction targets set out in the Mayor's London Plan (2011), with all residential development from 2016 being zero carbon and non-residential development from 2019 being zero carbon.

11.9 There are numerous ways that energy demand from buildings can be reduced (and therefore also reduce carbon dioxide emissions), such as improving insulation, using sustainable building materials, maximising solar gain, natural ventilation, reducing overheating and using energy efficient appliances. The choice of measures depends on many factors, including available technology. Development should not rely on mechanical heating or cooling, such as air conditioning. This document does not specify measures to improve energy efficiency, but requires all new development in the OA to reduce carbon dioxide emissions in accordance with the Mayor's London Plan (2011) targets, as set out in Table 11.1.

Table 11.1: Mayor of London's carbon reduction targets for new residential buildings and non-domestic buildings

11.10 In addition to the Mayor's London Plan (2011) targets, new development in RBKC will be expected to meet the relevant Code for Sustainable Homes or BREEAM standards, as set out in Core Strategy Policy CE1, at the time that detailed planning permission is sought.

Supplying Energy Efficiently

Key Principle ENE2:

Redevelopment of the OA must deliver decentralised energy (including associated district heat network) with associated energy centre(s) and infrastructure. The size (capacity), number and location of energy centre(s) must meet the energy needs of each phase of the development, with the potential to meet the needs of the surrounding area.

11.11 Supplying energy efficiently is about reducing reliance on the National Grid and requiring energy to be produced as close to demand as possible. Decentralised energy (DE) means the generation of energy close to the point of demand. This approach enables higher fuel conversion efficiencies and lower electricity distribution losses, particularly losses during the transportation of energy through the National Grid. It also allows heat released during the power generation process to be captured, distributed and used locally, often via a district heating network. District heating networks are fundamental to ensuring these efficiencies are achieved, and will enable low-carbon heat to be distributed and used for space heating and hot water in residential and non-residential buildings in the OA and beyond.

11.12 The proposed scale of development, high heat demand, proposed mix of land uses and opportunity for laying pipe infrastructure in an integrated manner means development in the OA presents an ideal opportunity to establish DE and associated district heat network. The DE and associated district heat network will not only benefit the OA, but could be extended or connected into DE systems nearby to benefit the surrounding area.

11.13 The integration of DE in the OA is supported by a site specific Energy Study (2011) and LBHF's and RBKC's borough-wide heat mapping studies.

11.14 Redevelopment of the OA will need to deliver DE and associated district heat network, which must be designed and implemented in accordance with the following criteria:

- a range of fuel types need to be assessed and the reasons for selecting or discounting certain fuel types, including energy from waste (see below), need to be provided;
- heat and energy will need to be delivered through an Energy Services Company or Multiple Utility Service Company or similar, and dialogue with potential providers needs to commence at an early stage;
- DE and associated district heat network must be available to supply all buildings on occupation, which may result in one or more energy centres as part of the development or the need for temporary plant;

- the energy centre(s) must be sufficient in size (capacity) and located centrally to deliver energy to meet the needs of each phase (if several energy centres are provided) or the entire development (if one energy centre is provided) and the surrounding area in the future;
- pipe infrastructure should be installed in an integrated manner with other service infrastructure and delivered on a phased basis;
- DE provision and the supporting infrastructure must be future proofed to ensure that the network continues to support a low carbon future;
- pipe infrastructure must comply with industry standard specifications to facilitate future interconnection of other buildings and/or networks;
- the location of energy centres must not impact on the residential amenity of new and existing residents, especially considering impacts such as noise, vibration and air pollution; and
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- the type of fuel selected for the DE and associated district heat network should not have unacceptable impacts on air quality and, where possible, renewable fuel sources should be prioritised.

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Renewable Energy

Key Principle ENE3:

On-site renewable energy will be required to meet any shortfall in achieving the carbon reduction targets. The suitability of renewable energy measures will be assessed having regard to their viability, location, whole life' carbon emissions and impacts such as noise, air quality, visual appearance and biodiversity.

11.15 All potential renewable technologies, such as photovoltaic panels, solar thermal, wind, ground and air source heat pumps and biomass fuelled boilers should be assessed for their feasibility in terms of energy generation capacity, 'payback', suitability (building, location and compatibility with DE), whole life' carbon emissions and likely impacts such as noise, air quality and visual appearance. The Government's Feed-in-Tariff and Renewable Heat Incentive provide incentives for renewable energy systems in new developments, which further improve viability by reducing the payback period. The possibility of generating energy from waste using advanced technologies such as anaerobic digestion should also be explored in accordance with RBKC's Core Strategy (2010) Policy CA7g and CE3b as this has the potential to reduce carbon dioxide emissions and provide an integrated waste management solution.

Energy Assessments

Key Principle ENE4:

Energy assessments must be submitted with all major planning applications and demonstrate how the targets above are to be met. Energy assessments must also demonstrate the reasons for selecting and discounting certain fuel options and renewable energy technologies.

11.16 The Mayor's London Plan (2011) Policy 5.2C requires "major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy". The energy assessment must show how the energy hierarchy will be implemented to meet the required carbon dioxide emission targets, taking into account the relevant Building Regulations at the time of the planning application. Energy Assessments will need to cover energy demand and carbon dioxide emissions not covered by the Regulations, with the aim of reducing carbon dioxide emissions at each stage of the hierarchy. Energy assessments must also provide detailed information on delivering decentralised energy and renewable energy systems, including all necessary infrastructure (energy centres, heat networks etc). They should also include the relevant Code for Sustainable Homes or BREEAM environmental assessments. Energy assessments must also demonstrate the reasons for selecting and discounting certain fuel options and renewable energy technologies.

11.17 It is expected that DE and the associated district heat network will be a core component in any energy strategy for the OA. The overall reductions in carbon and other emissions that can be achieved will be greater if a renewable fuel source is used. However the use of biomass fuels could increase local emissions of nitrogen dioxide (NO₂) and particulate matter (PM₁₀), potentially impacting on air quality. The potential emissions from any DE system will need to be assessed as part of an energy assessment submitted with any planning application, and will need to show how any negative impacts will be mitigated.

11.18 Energy Assessments will need to set out how the carbon reduction targets will be met within the OA. If the target for achieving zero carbon by 2016 cannot be met on-site, any shortfall will need to be met through 'Allowable Solutions' or financial contributions. Allowable Solutions are a project or scheme which will deliver verifiable carbon savings to meet required on-site targets to achieve zero carbon. However, Allowable Solutions cannot include measures already proposed to achieve the required carbon reduction targets, otherwise known as Carbon Compliance, as this will result in double counting.