

LONDON PLAN UPDATE

AES SUSTAINABILITY CONSULTANTS

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NEW LONDON PLAN

The latest draft of the New London Plan was published in August 2018, with examination in public commencing in January 2019 and adoption expected towards the end of 2019 or early 2020.

The draft plan contains a number of policy changes relating to sustainable construction and emissions reduction which are likely to have a material impact on energy strategies for new development. In advance of adoption, updated guidance on the calculation of carbon emissions for new developments from January 2019 has also been published. This document sets out the proposed changes and anticipated impacts.

This review is based on the draft London Plan documentation together with updated guidance on energy planning as published in October 2018. The SAP10 carbon emissions factors within this energy guidance are based on the figures in the July 2018 publication of SAP10, which is expected to be adopted following a consultation on revisions to Approved Document L to be launched in Spring 2019. Until the final documents referred to are published, the analysis should be taken as guidance only and no responsibility will be accepted for action taken as a result of the information contained herein.

CURRENT POLICY

Energy strategies for development in London are guided by the current version of Chapter 5 of the London Plan and the relevant policies contained within:

- Policy 5.1 - Climate change mitigation
- Policy 5.2 - Minimising carbon dioxide emissions
- Policy 5.3 - Sustainable design and construction
- Policy 5.4 - Retrofitting
- Policy 5.4A - Electricity and gas supply
- Policy 5.5 - Decentralised energy networks
- Policy 5.6 - Decentralised energy in development proposals
- Policy 5.7 - Renewable energy
- Policy 5.8 - Innovative energy technologies



KEY TARGETS

Carbon Dioxide Emissions

- 35% on-site CO₂ reductions from Part L 2013 Target Emission Rate
- Zero carbon target to be met through additional on-site saving or offset payments

Fabric Efficiency

- Meet Part L 2013 TER through fabric and energy efficiency measures

Adaptation to a changing climate

- Ensure development reduces risks of overheating
- Apply cooling hierarchy

Heat Hierarchy

- Follow hierarchy which prioritises decentralised energy networks

NEW LONDON PLAN POLICIES (DRAFT)

The draft plan replaces the policies previously contained within Chapter 5 with Chapter 9 – Sustainable Infrastructure. These new policies constitute a continuation of existing policies, however with a number of changes to strengthen standards and address the longer term impacts of development.

SI2 – Minimising greenhouse gas emissions

Major development should be net zero-carbon, reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the following energy hierarchy:

- Be Lean – Use less energy and manage demand during operation
- Be Clean – Exploit local energy resources and supply energy efficiently and cleanly
- Be Green – Maximise opportunities for renewable energy
- **Be Seen – Monitor, verify and report on energy performance**

The overall policy target relating to carbon emissions remains a 35% on-site reduction beyond Part L 2013 standards, with zero carbon offset through a cash-in-lieu contribution (or verifiable offsite measures).

There are however a number of changes:

- The 'Be Lean' target has been raised from Part L compliance, **to a residential target of 10% improvement through demand reduction and energy efficiency measures and 15% for non-residential** (to be reviewed subject to Part L amendments).
- The introduction of a fourth tier – 'Be Seen'. This requires annual monitoring and reporting of post-construction energy demand and carbon emissions for a period of at least 5 years.
- An acknowledgement that operational emissions make up a declining proportion of overall emissions, and a whole life-cycle approach is required to capture:
 - Unregulated emissions (cooking and appliances).
 - Embodied emissions – raw material extraction, manufacture, transport and construction.
 - Maintenance and material disposal.

All referable applications will be required to undertake whole life-cycle carbon emission assessments, with major non-referable development required to calculate unregulated emissions as a minimum.

- The carbon offset payment is proposed to increase from £60/tonne for 30 years to £95/tonne (although with boroughs still able to set their own payment levels).
- Energy strategies are required to include additional details including:
 - Plan for monitoring and reporting of energy demand and CO₂ emissions for at least 5 years post-construction.
 - Proposals to address air quality risks.
 - A strategy for achieving zero carbon on-site by 2050.
 - Analysis of costs to occupants of energy strategy.



SI3 – Energy infrastructure

- A. Engage with relevant energy companies and bodies to establish the future energy requirements and infrastructure arising from large-scale development proposals
- B. Energy masterplans should be developed for large-scale development locations which establish the most effective energy supply options. Energy masterplans should identify:
 - 1. major heat loads
 - 2. heat loads from existing buildings that can be connected to future phases of a heat network
 - 3. major heat supply plant including opportunities to utilise heat from energy from waste plants
 - 5. secondary heat sources
 - 6. opportunities for low temperature heat networks
 - 7. possible land for energy centres and/or energy storage
 - 8. possible heating and cooling network routes
 - 9. opportunities for futureproofing utility infrastructure networks to minimise the impact from road works
 - 10. infrastructure and land requirements for electricity and gas supplies
 - 11. implementation options for delivering feasible projects, considering issues of procurement, funding and risk, and the role of the public sector.
 - 11A. opportunities to maximise renewable electricity generation and incorporate demand-side response measures.
- C. Development Plans should:
 - 1. identify the need for, and suitable sites for, any necessary energy infrastructure requirements including upgrades to existing infrastructure
 - 2. identify existing heating and cooling networks and opportunities for expanding existing networks and establishing new networks.
- D. Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system
 - 1. the heat source for the communal heating system should be selected in accordance with the following heating hierarchy:
 - a) connect to local existing or planned heat networks
 - b) use zero-emission or local secondary heat sources (in conjunction with heat pump, if required)
 - e) use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network)
 - f) use ultra-low NOx gas boilers.
 - 2. CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that they meet the requirements of policy SI1 (A)
 - 3. where a heat network is planned but not yet in existence the development should be designed for connection at a later date.

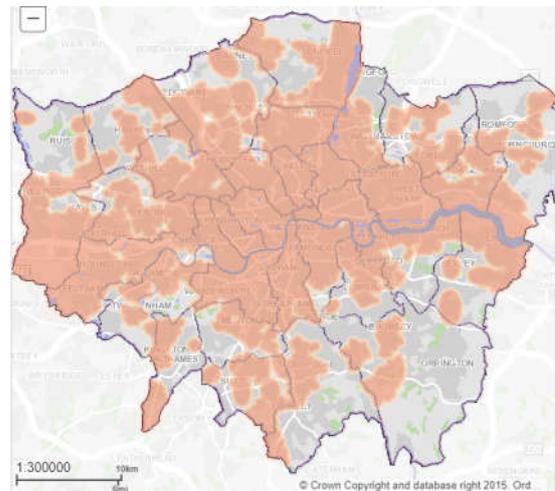


Policy SI3 amends current policy around heat networks and specifically reduces the current support mechanisms for communal CHP plant – this is mainly due to air quality concerns, combined with decarbonisation of the grid leading to a lower carbon offset realised through local electricity generation:

9.3.2A *Many of London’s existing heat networks have grown around combined heat and power (CHP) systems. However, the carbon savings from gas engine CHP are now declining as a result of national grid electricity decarbonising, and there is increasing evidence of adverse air quality impacts. Heat networks are still considered to be an effective and low-carbon means of supplying heat in London, and offer opportunities to transition to zero-carbon heat sources faster than individual building approaches. Where there remains a strategic case for low-emission CHP systems to support area-wide heat networks, these will continue to be considered on a case by case basis [Draft London Plan – minor changes July 2018]*

So, there is still substantial support for heat networks as a whole, and development is expected to be ‘connection-ready’ in the identified Heat Network Priority Areas (current map right) - which in practise currently covers a large part of the capital where development density is high.

Support is expressed for CIBSE CP1 Heat Networks Code of Practice for the UK and the Heat Trust standard, and it is noted that ‘it is expected network supply temperatures “will drop from the traditional 90°C-95°C to less than 70°C depending on system design”, helping ensure that networks are more accepting of low grade heat, including waste heat, and potentially reducing distribution losses.



Calculation of carbon emissions – SAP2012 vs SAP10

New guidance has been published in advance of the adoption of the New London Plan with the expectation that new developments will calculate their performance against the 35% carbon reduction target utilising the carbon factors set out as part of the SAP10 consultation and draft publication.

The main impact is a significant drop in emissions from grid-sourced electricity, reducing the carbon factor from 0.519kgCO₂/kWh to 0.233kgCO₂/kWh. This has two key effects:

- Reduces emissions from electric heating systems – direct electric and heat pumps
- Reduces benefit of onsite electricity generation – solar PV and CHP

SAP10 as a whole is not expected to be adopted until Spring 2020 following the Part L consultation, and may contain additional changes which will affect the overall feasibility of various heating and hot water systems, potentially including ‘primary energy’ as a compliance metric which will have a significant impact on energy strategies.



IMPLICATIONS

Building Fabric

- In order to ensure that the 10% 'Be Lean' target is met, fabric standards are likely to need to be improved. Where heat pump strategies are proposed, reduced demand will additionally help to address potentially higher energy costs.
- More attention paid to design vs as-built performance gap to ensure that predicted energy performance matches measured demand.
- Overheating risk is to be addressed through CIBSE TM59 for domestic development. This will require robust strategies to mitigate risk in line with the cooling hierarchy, prioritising passive measures which will need to be addressed early in development design.

Heating Strategies

- Communal gas-fired CHP plant less applicable due to lower carbon savings and higher distribution losses, together with low NO_x requirement to meet Policy SI1 relating to improving air quality.
- Development connected to heat networks to be designed for lower flow temperatures (including larger radiators, underfloor heating as applicable)
- Heat pumps – significant boost to heat pumps as emissions factor becomes circa 0.078kgCO₂/kWh (around a third that of mains gas).
- Direct electric strategies may comply with Part L CO₂ metric, however generally not supported due to additional strain on local distribution networks.

Statements, Monitoring and Reporting

The new policies will require a greater level of information in energy strategies, together with ongoing monitoring and reporting requirements and longer-term strategies:

- The new 'Be Seen' tier of the energy hierarchy requires referable applications to undertake whole life-cycle carbon emission assessments.
- Air quality measures should be referred to in energy strategies.
- A plan for monitoring and annual reporting of emissions for at least 5 years post construction (reporting mechanisms to be defined).
- Proposals to ensure site is future-proofed to achieve zero on-site carbon emissions by 2050.
- Analysis of energy costs to residents / occupiers from proposed strategy.

Please contact AES for further information and guidance relating to these proposed changes. We are able to offer a full range of sustainability services to support your applications in London, including comprehensive energy strategy advice and calculations, life cycle assessments and dynamic modelling to assess overheating risk.

