

**M67. Would Policies SI2, SI3 and SI4 assist in creating a healthy city in accordance with Policy GG3 and provide an effective strategic context for the preparation of local plans and neighbourhood plans? How would they affect the implementation of Policies GG4 and GG5 on delivering the homes Londoners need and growing a good economy? Are these policies and their detailed criteria justified and necessary and would they provide an effective basis for development management?**

*Creating a healthy city*

- 67.1. Yes, Policies SI2, SI3 and SI4 will assist in creating a healthy city by supporting the broad objectives and policies set out in GG3 and GG6.
- 67.2. In relation to Policy GG3, particularly (DB) and (F), Policy SI2 requires improved standards of energy efficiency over that required by Building Regulations to ensure that homes and workplaces are insulated and comfortable. Policy SI3 sets out a heating hierarchy that has been developed to ensure heating systems do not adversely impact on air quality, and Policy SI4 will help to ensure that developments are effectively and efficiently ventilated. Together these Policies will help to ensure that new buildings contribute to improved health for occupants.
- 67.3. In line with Policy GG6 Increasing efficiency and resilience, Policy SI2 sets out how development should contribute to the Mayor's ambition to make London zero-carbon by 2050 by setting zero-carbon and energy efficiency standards for development. SI3 ensures energy infrastructure and heating systems will also contribute towards reductions in carbon over the Plan period. Policy SI4 sets out how development can reduce the adverse impacts of the urban heat island.
- 67.4. Policies SI2, SI3 and SI4 also support Policy GG4 by ensuring that new developments provide good quality homes that meet high standards of design. The Policies ensure that new buildings are future-proofed to contribute to zero-carbon transition without the need for costly retrofit later on, with lower energy demand meaning lower bills and ensuring thermal comfort for occupants, while avoiding overheating. These Policies also support Policy GG5 by helping to ensure sufficient physical infrastructure to support London's growth, as well as providing leadership in innovation, research, policy and ideas by setting policies and standards that promote the green economy. Policies SI2, SI3 and SI4 build on approaches that have been successfully established in existing policy and are based on updated evidence that assesses the feasibility and deliverability of the approaches and technologies involved, including viability.

*Context for local plans and a basis for development management*

- 67.5. The Policies and supporting text as drafted are necessary to provide a London-wide policy framework with an appropriate level of detail to provide clarity and to allow the Policies to be implementable. The key principles underpinning these Policies use an updated evidence base to build upon approaches that have already been established and successfully implemented in existing policy<sup>1</sup>. As such, Policies SI2, SI3 and SI4 set out an effective strategic context for the preparation of local plans and neighbourhood plans by setting clear priorities for carbon, energy and heat risk

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<sup>1</sup> NLP/SI/023: Mayor of London, [Energy Monitoring Report: Monitoring the implementation of London Plan energy policies in 2017](#), October 2018

policies at the local level, and give a framework and criteria for identifying decentralised energy opportunities through energy masterplans.

- 67.6. SI2, SI3 and SI4 also set effective standards and targets for development management, giving clear requirements for energy strategies and ensuring that flexibility is provided through the energy and heating hierarchies.

**In particular:**

- a) In seeking to minimise greenhouse gas emissions does Policy SI2 provide sufficient clarity about the zero-carbon target and how and when it is to be achieved? Is the target justified and consistent with national policy and other policies in the draft London Plan? Are all the criteria and supporting text necessary?**

67.7. Policy SI2 continues an approach established in previous iterations of the London Plan in setting a clear minimum target for the reduction in on-site carbon emissions, in line with London and the UK's climate change commitments, complemented by a requirement for any emissions not reduced on site to be offset. Minor Suggested Changes to the Policy have been proposed<sup>2</sup> to provide clarification on the scope of carbon emissions to be included in the definition of 'zero-carbon'. The zero-carbon target (i.e. the onsite minimum carbon reduction requirement combined with carbon offset for remaining emissions) has been in place for residential development under current London Plan Policy since 2016. This is proposed to continue with the introduction of the new London Plan, whereupon it would also apply to non-residential development. A further suggested change has been proposed to clarify timescales for implementation of the zero-carbon policy for non-residential development (see Appendix 1).

67.8. The energy hierarchy sets out a clear and established approach to reducing on-site carbon emissions by requiring at least a 35 per cent improvement over national building regulations through a combination of:

- energy efficiency measures (be lean)
- a low carbon energy supply, which includes exploiting local energy sources (be clean)
- maximising opportunities for renewables (be green)
- monitoring, verifying and reporting on energy performance (be seen).

67.9. Where the zero-carbon target cannot be fully achieved on-site the shortfall is required to be off-set in line with current practice. A suggested nationally-recognised non-traded carbon price<sup>3</sup> has been considered in the London Plan Viability Assessment to account for this. The GLA has prepared Carbon Offset Funds guidance<sup>4</sup> to assist boroughs in setting up funds and spending the funds on appropriate projects.

67.10. Alongside SI2, Policy SI3 will also be key to delivering the zero-carbon target. For example, the heating hierarchy in SI3 has been updated to provide the strategic

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<sup>2</sup> NLP/CD/09: Mayor of London, [Table of Changes - Minor Suggested Changes to the Draft new London Plan](#), August 2018, Ref: MSC 9.9, 9.14 and 9.15

<sup>3</sup> NLP/SI/008: AECOM, [London Carbon Offset Price](#), June 2017

<sup>4</sup> NLP/SI/024: Mayor of London, [Carbon offset funds: Greater London Authority guidance for London's Local Planning Authorities on establishing carbon offset funds](#), October 2018

direction for heating in London for new development, based on the Government's expectation that heat will become increasingly electrified – this is supported by GLA-commissioned research (Zero-Carbon Energy Systems<sup>5</sup>) into how heating will need to be decarbonised to meet the Mayor's wider zero-carbon ambition for London by 2050.

*Policy SI2: consistency with national policy and other policies in the draft London Plan*

- 67.11. The zero-carbon target is justified and consistent with the UK's Climate Change Act 2008 and its commitments under the Paris Agreement (2016). The Planning and Energy Act 2008 and the Planning Act 2008 put a legal duty on local authorities to include policies on climate change mitigation and adaptation in development plan documents. The GLA Act 2007 (as amended) also places a duty on the Mayor to address climate change through the Mayor's strategies and as such, the draft London Plan Policies are supported by the Mayor's London Environment Strategy, which sets out how the Mayor will use his other powers to tackle climate change. The London Environment Strategy sets out a series of carbon budgets to get to a zero-carbon London by 2050 and has been independently verified as being compliant with the highest ambition of the Paris Agreement to limit global climate change to 1.5 degrees. This is also in line with the most recent report from the Intergovernmental Panel on Climate Change (IPCC). Driven by draft London Plan policies, London's carbon budgets assume that new build is highly energy efficient and uses low carbon and renewable energy. The Energy Topic Paper summarises these issues and sets out the international, EU and national policy context for Policies SI2 and SI3.<sup>6</sup>
- 67.12. Policy SI2 also aligns with the 2012 NPPF policy to reduce greenhouse gas emissions and increase the use and supply of renewable and low carbon energy and heat. In response to the recent consultation on revisions to the NPPF, the government has provided an update on planning policies relating to energy:

*'To clarify, the Framework does not prevent local authorities from using their existing powers under the Planning and Energy Act 2008 or other legislation where applicable to set higher ambition. In particular, local authorities are not restricted in their ability to require energy efficiency standards above Building Regulations'<sup>7</sup>.*

- 67.13. Policy SI2 is consistent with, and is supported by, other Policies in the draft Plan, most notably SI3, which sets out policy for energy infrastructure and the heating hierarchy, and SI4, which seeks to manage and minimize heat risk. Policy SI2 also operates alongside other Policies in the draft Plan that promote a sustainable approach to design and construction; in particular Policy D1, which states that developments should aim for high sustainability standards, and Good Growth Policy GG6 and Policy SI7, which set out principles that aim to improve resource efficiency and promote the circular economy.

*Policy SI2 criteria and supporting text*

- 67.14. The criteria and supporting text are necessary to make the principles and core aspects of the policy clear and to ensure that the Policy can be effectively implemented. The detailed criteria set out in paragraph 9.2.10 help to ensure that applicants are aware of

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<sup>5</sup> NLP/SI/037: Element Energy for GLA & C40 Cities, *Zero Carbon Energy Systems*, September 2018

<sup>6</sup> NLP/TP/05: Mayor of London, *Energy topic paper*, December 2017

<sup>7</sup> MHCLG, *Government response to the draft revised National Planning Policy Framework consultation*, July 2018

the information that is required to demonstrate compliance with Policy SI2 with regard to energy, and the links between this and other Policies, including S1, S13 and S14. The criteria will be supported by further detailed guidance such as that which supports implementation of the current Policies set out in the Energy Assessment Guidance<sup>8</sup> and Carbon Offset Guidance<sup>9</sup>.

**b) How are unregulated emissions and whole life-cycle carbon at Policy SI2 DA and DB to be calculated and is this justified?**

67.15. The zero-carbon target relates to carbon emissions associated with a building's in-use energy and is based on the regulated emissions captured by Building Regulations Part L.<sup>10</sup> These operational carbon emissions will make up a declining proportion of a development's whole life carbon emissions as operational carbon targets become more stringent in line with climate change objectives. To fully capture a development's carbon impact, a whole life-cycle approach is needed to capture its unregulated emissions (i.e. those associated with cooking and small appliances), its embodied emissions (i.e. those associated with raw material extraction, manufacture and transport of building materials, and construction) and emissions associated with maintenance and eventual material disposal. The amendments proposed to SI2 (DA and DB) through Minor Suggested Changes clarify how applicants should approach these wider carbon emissions in development schemes.<sup>11</sup>

67.16. Major developments will be required to calculate and minimise unregulated emissions. This will involve assessing the emissions associated with the use of appliances and other operational energy use not covered by Building Regulations. The unregulated emissions are currently calculated through approved government Part L modelling tools or BRE methodologies. A reduction in unregulated emissions is achieved by raising energy usage awareness with a view to influence user behaviour, through the encouragement of high efficiency white goods and equipment and through the uptake of smart metering devices. This assessment continues the approach established in the existing London Plan and is supported by further requirements and reporting templates set out in the Energy Assessment Guidance<sup>12</sup>.

67.17. The assessment and measurement of whole-life carbon emissions is an emerging area within planning and the construction industry. The proposed requirement set out in SI2 DB is considered to take a balanced approach to tackling these emissions by focusing on applications referable to Mayor.<sup>13</sup> This is considered an appropriate scale of development for the introduction of the Policy and will allow the GLA to collect and monitor data that will inform future policy. Whole life-cycle carbon emissions should be calculated using a national calculation methodology, such as the Royal Institution of Chartered Surveyors (RICS) methodology. This is an industry-approved methodology that is widely considered to be the most comprehensive currently available. The approach to whole life-cycle carbon assessments will be confirmed through guidance following the adoption of the new London Plan.

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<sup>8</sup> NLP/SI/038: Mayor of London, Energy Assessment Guidance, October 2018

<sup>9</sup> NLP/SI/024: Mayor of London, Carbon Offset Guidance, October 2018

<sup>10</sup> MHCLG, Building Regulations – Conservation of fuel and power: Approved Document L, 2013

<sup>11</sup> NLP/CD/09: Mayor of London, Table of Changes – Minor Suggested Changes to the Draft new London Plan, August 2018, Ref: MSC 9.14 and 9.15

<sup>12</sup> NLP/SI/038: Mayor of London, Energy Assessment Guidance, October 2018

<sup>13</sup> NLP/CD/09: Mayor of London, Table of Changes – Minor Suggested Changes to the Draft new London Plan, August 2018, Ref: MSC 9.15

**c) Are the provisions in Policy SI3 relating to energy masterplans justified? Should they be limited to large-scale development locations and is the list of items to be identified comprehensive?**

67.18. Yes, energy masterplans are important in helping to establish area-wide heat networks and the extent of market competitive areas. They are essential in helping to plan for the transition to zero-carbon as they help to identify how clean, low-carbon energy sources can be achieved locally and will help London to become more resilient, as part of a more decentralised energy network. Energy masterplans are important in informing strategic decisions on decentralised energy, local plan policy and planning decisions. Decentralised energy opportunities will vary across London depending on: the availability of low-carbon energy, such as sources of waste heat; the scale, density and mix of uses in new development; and the potential for existing buildings to connect to decentralised energy networks. Opportunities to create or expand networks are often unlocked through large-scale developments (e.g. as part of Opportunity Areas) and it is considered appropriate to produce energy masterplans at this scale of development to identify these opportunities.

67.19. The list of items identified as key considerations is considered to be comprehensive, being based on previous experience of energy masterplans, consistent with GLA guidance, which provides further details of how energy masterplans should be approached. In addition, the GLA's Decentralised Energy Enabling Project (DEEP) provides project development support to boroughs in developing and bringing into operation their decentralised energy schemes. This support includes providing funding as well as specification writing for projects within London.

**d) Are the provisions in Policy SI3 relating to major development proposals within Heat Network Priority Areas justified? Is the sequence and content of the heating hierarchy justified having regard, amongst other things, to greenhouse gas emissions?**

67.20. The provisions in Policy SI3 are justified and necessary to achieve the most cost-effective and resource-efficient decarbonisation of London's heat supply arrangements, in line with the wider zero-carbon target set out in SI2, and the requirements of the 2012 NPPF to support decentralised energy networks and co-location of heat customers and suppliers. The zero-carbon energy systems report identifies pathways for the decarbonisation of London's energy, including heat.<sup>14</sup> District heating networks play an important role in all the potential decarbonisation pathways. The energy topic paper sets out the importance of district heating and provides further detail on Heat Network Priority Areas (HNPAs) and the heating hierarchy.<sup>15</sup>

67.21. The approach to heat networks and energy masterplans builds on the Policies established and implemented through the current London Plan. Heat networks are strategic infrastructure with a technical life of more than 50 years.<sup>16</sup> Such systems need to be planned to ensure that there is sufficient capacity to supply future heat demands and deliver reliable and affordable heat for consumers. Energy masterplans

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<sup>14</sup> NLP/SI/037: Element Energy for GLA & C40 Cities, [Zero Carbon Energy Systems](#), September 2018

<sup>15</sup> NLP/TP/05: Mayor of London, [Energy topic paper](#), December 2017

<sup>16</sup> Mayor of London, [London Heat Network Manual](#), April 2014

are the de facto approach to identify, plan for and promote common design standards for heat networks and developments. Energy master plans also ensure the effective use of primary energy resources, including low-carbon waste heat, in line with the heating hierarchy, and facilitate the future interconnection of heat networks to realise the benefits of economies of scale.

67.22. The heating hierarchy promotes the importance of district heating networks for delivering greenhouse gas emission reductions and has been adapted to ensure energy used in buildings is generated from clean, low carbon and renewable sources, such as waste heat and solar. The energy topic paper provides further detail on the updated heating hierarchy and its role in reducing greenhouse gas emissions from new development.<sup>17</sup>

**e) Would Policy SI4 adequately address the contribution of the design of outdoor space to urban cooling without creating other adverse impacts and does it consider overall thermal comfort?**

67.23. Policy SI4 sets out clear principles for managing heat risk through new developments. The proposed Minor Suggested Changes clarify how the Policy applies to both internal overheating and wider contributions to the urban heat island.<sup>18</sup> The Policy aims to ensure the overall thermal comfort of occupiers by encouraging designers to consider the different types of overheating risk (internal and external) alongside other matters, such as ensuring that rooms receive adequate daylight and the need to meet the energy efficiency targets set out in SI2.

67.24. Policy SI4 must be read in tandem with other complementary policies in the draft Plan. In particular Policies D1, D4, D7, G1 and G5 address matters of design of buildings, public realm and green infrastructure, all of which will have an influence on the design of outdoor space and impact on urban cooling.

67.25. Minor Suggested Changes to SI4 aim to clarify the role of green infrastructure in relation to reducing heat risk and will help to ensure that the contribution of the design of outdoor space is adequately addressed.<sup>19</sup> The implementation of Policy SI4 and related Policies will be supported by further guidance following the adoption of the new London Plan that will help to show how cooling can be designed in to development, for example through green infrastructure.

67.26. The Policy is supported by external guidance, such as the guidance and datasets referenced in paragraph 9.4.5 of the Chartered Institution of Building Services Engineers' (CIBSE)<sup>20</sup> which is used to assess and mitigate overheating risk and ensure appropriate levels of thermal comfort.

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<sup>17</sup> NLP/TP/05: Mayor of London, [Energy topic paper](#), December 2017

<sup>18</sup> NLP/CD/09: GLA, [Table of Changes - Minor Suggested Changes to the Draft new London Plan](#), August 2018, Ref: MSC 9.46 to 9.54

<sup>19</sup> NLP/CD/09: GLA, [Table of Changes - Minor Suggested Changes to the Draft new London Plan](#), August 2018, Ref: MSC 9.46 and 9.49

<sup>20</sup> CIBSE: TM49: Design Summer Years for London 2014, TM52: Limits of thermal comfort: avoiding overheating in European buildings 2013, TM59: Design methodology for the assessment of overheating risk in homes, 2017 Accessed via: [www.cibse.org](http://www.cibse.org)

**f) What is the justification for the cooling hierarchy as set out in Policy SI4B?**

67.27. Climate change means that the risks of extreme hot weather events is increasing and it is therefore important that development in London should actively respond to and manage this risk. This is recognised in the 2018 NPPF, which states that plans should take a proactive approach to mitigating and adapting to climate change, including the risks of overheating.<sup>21</sup> The cooling hierarchy sets out principles that aim to ensure that heat risk is managed in ways that prioritise effectiveness and energy efficiency and avoid increased costs to occupiers.

**g) Do the policies place sufficient emphasis on the use of renewables and energy efficiency?**

67.28. Yes; Policy SI2 emphasises the importance of renewables and energy efficiency. Developers are encouraged to maximise renewables on-site, but only after energy demand has been reduced as far as possible and consideration has been given to an appropriate heating system, which may itself be a renewable or low carbon technology. This is in line with the Mayor's aim of generating more renewable energy in London, as set out in the London Environment Strategy.<sup>22</sup> New energy efficiency targets have been proposed to ensure that developers prioritise the reduction of energy demand on-site, meaning lower bills for occupants and that the contribution of new development to London's carbon emissions is minimised.

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<sup>21</sup> MHCLG: NPPF 2018, paragraph 149

<sup>22</sup> NLP/SI/025: Mayor of London, London Environment Strategy, May 2018, Pages 220, 263-266

## Appendix 1- M67 Further suggested changes

The Mayor is suggesting the following further changes to the supporting text of Policy S12:

- **Bold blue** – new text
- ~~Purple strikethrough~~ – deleted minor suggested change text
- ~~Red strike through~~ – minor suggested change
- **Red bold** -minor suggested change

Change ref no	Policy/para /table/map	Further suggested change
M67.1	Paragraph 9.2.4	A zero-carbon target for major residential developments has been in place for London since October 2016 <b>and applies to</b> . <del>This target will be extended to include</del> major non-residential developments <del>from 2019</del> <b>with the introduction of this Plan</b> <del>on final publication of this Plan (expected 2019)</del> .