


Could Do Better
a report card on progress with Mayoral carbon
reduction targets

July 2014



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Contents

Foreword	4
Executive summary	5
Overall score	6
Buildings	9
Transport	11
Economy	15
Workplaces retrofit	16
Energy supply	20
Homes retrofit	25
Minority opinion from the GLA Conservative Group	30
Appendix 1 Recommendations	31

Foreword

This report card is an assessment of where the Mayor is on carbon emissions, half-way through his second term from his election in 2008, and gives us a good idea of what needs to be done at the tail-end of his administration.



Murad Qureshi AM

At the core of the Mayor's Climate Change Mitigation and Energy Strategy is the 60 per cent target reduction in carbon emissions from 1990 levels by 2025, giving us a clear goal across sectors like Buildings, Transport, Economy, Energy Supply, and with particular programmes like home and workplace retrofitting.

But milestones have been missed in key programmes like home energy efficiency and decentralised energy, where we are not expecting the Mayor to reach 1.2 million homes retrofitted, nor the 2015 milestones for decentralised energy generation, hence the low scores in these areas. Only marginally better is workplace retrofitting in our assessment. Areas of better performance include buildings and transport, where the energy efficiency of new buildings, progressing ahead of target, and traffic reduction of 11 per cent on 2000, explain much of the progress made. However, greater numbers of low-emission vehicles would have helped, but neither the 100,000 electric vehicles promised, nor the 25,000 plug-in points, have materialised.

The Mayor needs to make greater use of the buying power of the GLA Group; for example, Transport for London - the biggest energy consumer in the capital - could drive demand for low-carbon energy from smaller, and community-based suppliers, to help this sector really take off.

Not surprisingly, overall, the Mayor could do better. So let us see if the Mayor is prepared to take up the challenge again with less than two years left on his mandate from Londoners.

Murad Qureshi AM

Chair of the Environment Committee at the time of the investigation

Executive summary

London's carbon emissions are missing the milestones that mark the way to the Mayor's pledge to reduce carbon emissions by 60 per cent by 2025. There is a mixed picture of performance across Mayoral programmes, with good progress in some areas, but also worrying shortfalls in other important areas.

The Mayor has initiated some innovative programmes to promote energy efficiency measures in homes and workplaces, and has promoted efficiency in new buildings. And London has seen much greater reductions in traffic levels than other parts of the country, an important contributor to emissions reductions.

However, Mayoral figures indicate that 2015 milestones are to be missed in key programmes such as retrofitting homes for energy efficiency and decentralised energy generation. It is also not clear that the workplace retrofit programme will meet its targets. And there are some indications that progress with reducing motor traffic, and increasing rates of cycling, may be faltering.

There are also contributions from the national level that do not look likely to be delivered. Carbon emissions from national grid electricity are falling, but not fast enough for the Mayor's strategy. Few London-based government departments are taking up the Mayor's workplace energy efficiency offer. And the Green Deal for homes energy efficiency has not so far kept up the pace of previous programmes, much less provided the necessary acceleration.

This report makes recommendations for improvements in Mayoral activity, including to align retrofit promotion more closely with boroughs' needs, to step up work on decentralised energy by producing a clearer delivery plan and promoting the renewable energy 'brand', to bring forward help for small businesses, and to address Transport for London's future energy supplies. It also recommends that the Mayor makes clear how he will secure the necessary contributions from central government in several areas.

The report has the support of a majority of the Committee. The GLA Conservative Group has a minority opinion, set out on page 31.

Overall score

Score	Summary
4/10	<i>Overall, London's carbon emissions are missing the Mayor's milestones. The energy efficiency of new buildings is progressing ahead of target, but there is significant room for improvement in other key areas, particularly retrofitting homes and decentralised energy generation.¹</i>

Background

Reducing carbon emissions, to help reduce climate change, is a high priority for London. The Mayor was elected on a pledge to reduce London's carbon emissions by 60 per cent by 2025.² London's contribution is crucial to the achievement of statutory national carbon reduction targets, and the UK's international commitments in the global effort against climate change. Models predict that unchecked carbon emissions could lead us far beyond the 2°C global warming guardrail, making places like London even more vulnerable to severe weather such as floods, droughts and heat waves, as well as threatening the stability of the global economy on which London depends.

Overall targets and performance

Carbon emissions can be tracked against planned emissions. The Mayor's Climate Change Mitigation and Energy Strategy (CCMES)³ sets out steps to achieve the 60 per cent reduction, with an annual reduction path and five-yearly milestones.⁴

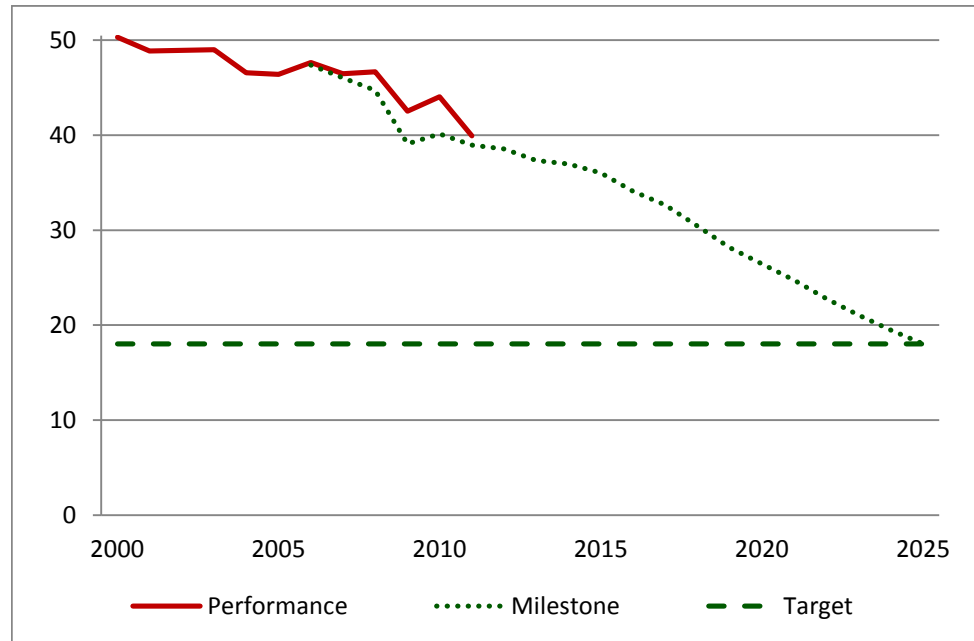
London's carbon emissions are missing the Mayor's milestones and look set to continue to do so. Emissions data for 2011 show a reduction of 11 per cent compared to 1990 – missing the milestone for that year of 13.5 per cent.⁵ London's CO₂ emissions, milestones and targets are shown in Table 1 and Chart 1.

Table 1: London overall emissions (MtCO₂ per year)

	Baseline 1990	Peak ⁶ (2000)	Latest (2011)	Milestone 2015	Milestone 2020	Target 2025
Performance	45.05	50.31	39.92			
Milestone/target			38.95	36.01	26.46	18.02

Sources: Performance from LEGGI, milestones and target from CCMES

Chart 1: Emissions are decreasing, but missing Mayoral milestones
(Million tonnes of carbon dioxide – MtCO₂ per year)



Source: LEGGI, CCMES

It should be noted that 2011 emissions were unusually low because of mild winter weather. Under average weather conditions, emissions would have missed the milestone by a wider margin. Emissions for 2012 and 2013 look likely to be higher than 2011; government figures released recently show a nine per cent rise in London's emissions from 2011 to 2012.⁷

Sector scores

The sector scores in this report card are shown in Table 2.

Table 2: Sector scores and weighted average

Sector	Score
Building	8
Transport	6
Economy	6
Workplaces retrofit	4
Energy supply	3
Homes retrofit	3
Weighted average⁸	4.6

The main areas of concern are energy efficiency retrofitting (in homes and in workplaces) and decentralised energy generation. The reasons behind the sector scores are detailed in the following sections.

Buildings

Score	Summary
8/10	<i>The Mayor has delivered actions on new buildings set out in his Climate Change Mitigation and Energy Strategy. This includes improving the energy efficiency of new buildings, which is well ahead of target.</i>

Background

Energy use in buildings generates the great bulk of London's carbon emissions, as well as being responsible for a significant element of household and business costs. It is estimated that 78 per cent of London's emissions come from homes and workplaces. Buildings remain in use for a very long time, and so it is essential that buildings constructed now, in the knowledge of how their energy use will affect the climate for generations to come, should have low carbon emissions designed and built into them.

The Mayor has milestones and targets for both homes and workplaces as part of his overall carbon reduction strategy. He also has specific targets for the energy efficiency of new buildings.

Targets and performance

The Mayor's target is to improve energy efficiency in new buildings in London beyond the 2010 Building Regulations to reach the 'zero carbon' standard by the end of the decade, as shown in Table 3 below.

Table 3: New buildings energy efficiency targets

Year	Target improvement on 2010 building regulations	
	Residential	Non-domestic
2010-2013	25 per cent	25 per cent
2013-2016	40 per cent	40 per cent
2016-2019	Zero carbon	As per buildings regulations requirements
2019-2031	Zero carbon	Zero carbon

Source: CCMES Annual Report 2014

In 2011 and 2012, these targets were exceeded, with a 33 per cent reduction in 2011 and 36 per cent in 2012. Continued improvement will be needed to reach the 40 per cent target from 2013/14. These figures are averages – not all of the individual developments meet the relevant standards. In 2012, about a third of developments required cash-in-lieu contributions from developers to account for shortfalls in CO₂ emissions reductions, totalling about £5 million.

The Mayor also published his Housing Supplementary Planning Guidance in 2012, the detailed document that underpins the London Plan policies. This includes good practice guidance to bring new developments up to Code for Sustainable Homes Level 4.

However, it should be noted that rates of housebuilding are short of the levels the Mayor has identified as necessary to meet the needs of London's growing population – by more than half according to some reports.⁹

Transport

Score	Summary
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6/10 *Transport emissions are fairly close to their 2015 target. They are not considered weather-sensitive, so are likely to maintain their progress. However, the transport emissions target is not as stringent as in other sectors, and much of the progress can be attributed to non-London actions.*

Background

Transport emissions are the third major element of London’s emissions, accounting for 22 per cent of the total, and must be reduced to meet the overall target. The Mayor has transport emissions milestones and targets as part of his overall carbon reduction strategy. Reducing the energy consumption of transport can also reduce its cost.

The Mayor has a number of transport policies aimed at reducing carbon emissions, including investing in public transport, low-emission vehicles and zero-emission modes such as walking and cycling.

Targets and performance

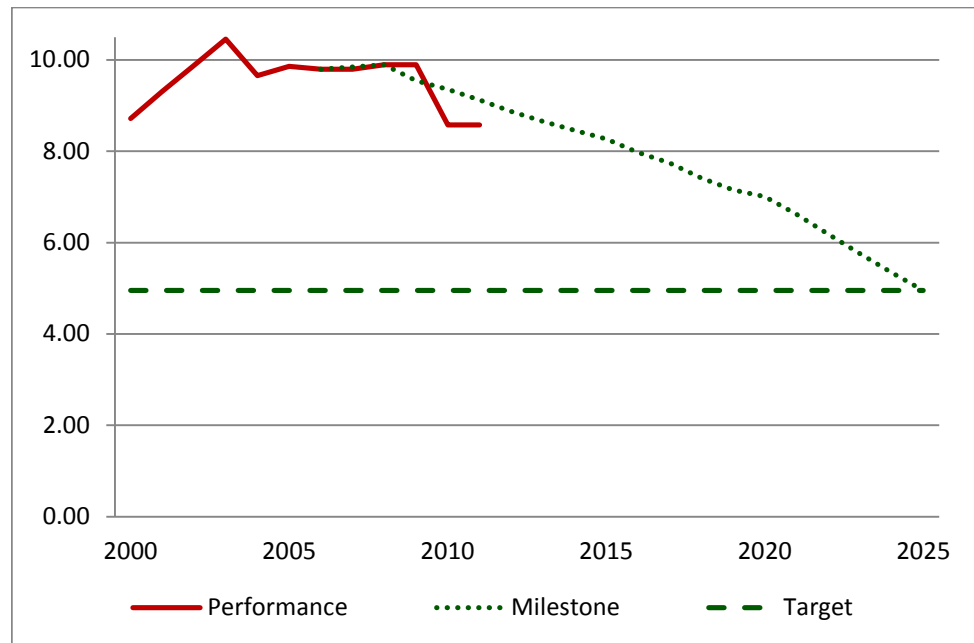
Transport emissions in 2010 were well ahead of the CCMES milestone, and most of the 2015 milestone has been achieved already. Progress is on track to reach the 2025 target if the average annual reduction can be maintained.¹⁰ Reported figures for transport emissions, with milestones and targets, are shown in Table 4 and Chart 2.

Table 4: Transport emissions (MtCO₂ per year)

	Baseline 1990	Peak (2003)	Latest (2010)	Milestone 2015	Milestone 2020	Component target 2025
Performance	9.47	10.45	8.58			
Milestone/target			9.35	8.27	7.00	4.95

Sources: Performance from LEGGI, milestones from CCMES Roadmap

Chart 2: Transport emissions are ahead of the Mayor's milestones
(MtCO₂ per year)



Source: CCMES (and Roadmap and 2014 annual report), LEGGI

However, much of the impetus behind this improvement has come from the national and European levels; some Mayoral programmes seem to have less impact. Also, the milestones and targets are less ambitious for transport than for the other sectors. The 2015 milestone for transport is a 13 per cent reduction on the 1990 baseline emissions, compared with a 21 per cent reduction for homes, and 23 per cent for workplaces.

EU and national drivers of transport emissions

The expectations for industry-wide action on vehicle emissions are being exceeded. The CCMES Roadmap indicates that the Mayoral targets rely on the average emissions of new cars being no more than 130 gCO₂ per km by 2015, and no more than 95 gCO₂ per km by 2020. These are in accordance with EU targets. The 2015 target has already been met by the industry, in 2013.¹¹

Mayoral activities

London transport is an area where the Mayor plays a major role, providing great potential to affect carbon emissions directly.

Traffic reduction

The major Mayoral success has been in traffic reduction. London's traffic levels in 2012 were 11 per cent lower than in 2000.¹² This reduction

started earlier and has been larger than in the rest of the country. However, there are indications that traffic levels increased in 2013; it is too early to say whether this represents a sustained reversal of the downward trend.

There is Mayoral activity, and considerable publicity, to promote and enable cycling. Cycling has grown in recent years, but this trend has also stalled in 2012 and 2013. Also, cycling begins from a low base, and extra cycling journeys tend to substitute for public transport journeys rather than car journeys, so the carbon impact of cycling growth is so far small.

Another major area of Mayoral investment is public transport, where expansion plays a large role in reducing car use and therefore vehicle emissions. However, the Transport Committee has found that the bus network is increasingly crowded, and is not set to expand its capacity over the current decade to keep pace with London's continued rapid population growth.¹³ Bus ridership rose by four per cent per year from 2000/01 to 2011/12, but Transport for London (TfL) plans assume a rise of only one per cent per year between now and 2021/22. The Transport Committee has recently written to the Mayor highlighting this and asking for the Mayor and TfL to set out a strategy to cope with increasing demand for bus services, comparable to the strategies for the Tube and rail networks.

Low-emission vehicles

There has been limited progress with low-emission vehicles. The uptake of electric cars is small, despite the provision of charging points. Having originally aimed to install 25,000 charging points across London by 2015, the Mayor revised the target downwards to 1,300, which has now been exceeded. Recent reports indicate that the Mayor expects to reach his target of 100,000 electric vehicles on London's roads by about 2020, but is so far only three per cent of the way there. The small number of electric vehicles on the road, and the preferred charging patterns (largely overnight at home), mean that even the reduced rollout of charging points is little-used – 43 per cent of points were not used in the first three months of this year.¹⁴

Hybrid buses are becoming operational in the numbers envisaged in the CCMES. The strategy set a target of 300 hybrid buses in service by the end of 2012; there were 380 in March 2013. This compares with the total bus fleet of around 9,000 vehicles.

Taxis are coming to market that are capable of zero tailpipe emissions; some are in operation already in cities such as Amsterdam and (on a pilot basis) New York,¹⁵ while the Mayor is to require all London taxis to be zero-emissions capable by 2018.¹⁶ Zero-emissions operation in central London may be required under the Ultra-Low Emission Zone being developed for implementation in 2020¹⁷.

Transport for London's electricity use

Powering the London Underground, London Overground and the Docklands Light Railway makes TfL the biggest energy consumer in London. It sources most of its electricity from national suppliers. This exposes TfL to the increasing prices of electricity from the national grid, and any potential future issues of reliability of supply. To mitigate such issues, TfL is developing an energy strategy.

There are a number of areas in which TfL's energy strategy could promote carbon reduction. For example, TfL has been negotiating with London suppliers for low-carbon energy. The Greater London Authority (GLA) is in the process of gaining a licence to broker the supply of electricity between public authorities, and considers that TfL could potentially use most of the available excess supply from public sector combined heat and power initiatives, in the short to medium term. Additionally, London Underground generated a great deal of its own electricity in the past. TfL still has one power station in Greenwich; this is currently used as an emergency backup, but could be used more widely.

Recommendation 1

Transport for London, in its forthcoming energy strategy, should set out how it will power the Tube, including:

- How TfL's buying power could stimulate low-carbon decentralised energy in London, and reduce TfL's carbon emissions.
- How much TfL could invest in its own low-carbon energy capacity, reducing both carbon emissions and its exposure to energy price volatility.

Economy

Score	Summary
6/10	<i>The Mayor has delivered commitments in this area, but they were relatively short-range and some were delivered by others at the national level.</i>

Background

The low carbon sector is worth over £25 billion to London's economy and employs over 160,000 people. The sector grew by over five per cent in 2010/11 and 2011/12, in terms of sales; but employment growth was less consistent, and employment actually fell in 2011/12.¹⁸

Mayoral activity

The Mayor has fulfilled several low-carbon economy commitments. He set up the London Green Fund, providing capital for carbon-reducing schemes. The GLA, the London Waste and Recycling Board and the European Regional Development Fund invested a total of £100 million, which is split between sector-specific funds investing in energy efficiency and decentralised energy for buildings, in recycling and waste-to-energy, and in social housing refurbishment. These funds also lever in additional private investment. Some investments have already been made – current projects have received £80 million, and are forecast to achieve annual CO₂ savings of over 118,000 tonnes.

The Mayor's Low Carbon Prize has been awarded twice, in 2011/12 and 2012/13. The cash prize is given to students to develop and bring to market innovative ideas for sustainable living and carbon reduction. In 2014, the prize was rebranded as the Mayor's Low Carbon Entrepreneur – it is still open to students, but now also incorporates training opportunities and paid internships for entrants and finalists.

Other activity

The Centre for Carbon Measurement opened, with Mayoral support, at the National Physical Laboratory in London in 2012, to reduce uncertainties in climate data and support carbon emissions trading. In addition, the Green Investment Bank is a national initiative with similarities to the London Green Fund, for which the Mayor advocated.

Workplaces retrofit

Score

Summary

4/10

GLA programmes to retrofit workplaces are not progressing as fast as planned. In 2011, London's workplace emissions missed the milestone by a clear margin.

Background

Workplace energy efficiency is an essential element of the Mayor's carbon reduction strategy, as it helps businesses cut costs as well as reducing carbon emissions. It is estimated that 42 per cent of London's emissions come from workplaces.

As with domestic energy efficiency, retrofitting existing workplaces is crucial because the energy consumption of existing buildings will continue to generate the bulk of emissions for many years to come.

The Mayor funds the RE:FIT workplace retrofit programme, with strategic targets for the numbers of workplaces reached and the total floorspace retrofitted. Smaller businesses can also access the Green Deal.

Targets and performance

GLA programmes to retrofit workplaces are not progressing as fast as planned. Emissions in 2011 missed the Mayor's milestone by a clear margin, and recently-published government figures⁷ show that London's industrial and commercial emissions rose by 11 per cent from 2011 to 2012 and, therefore, fell further behind the strategy.

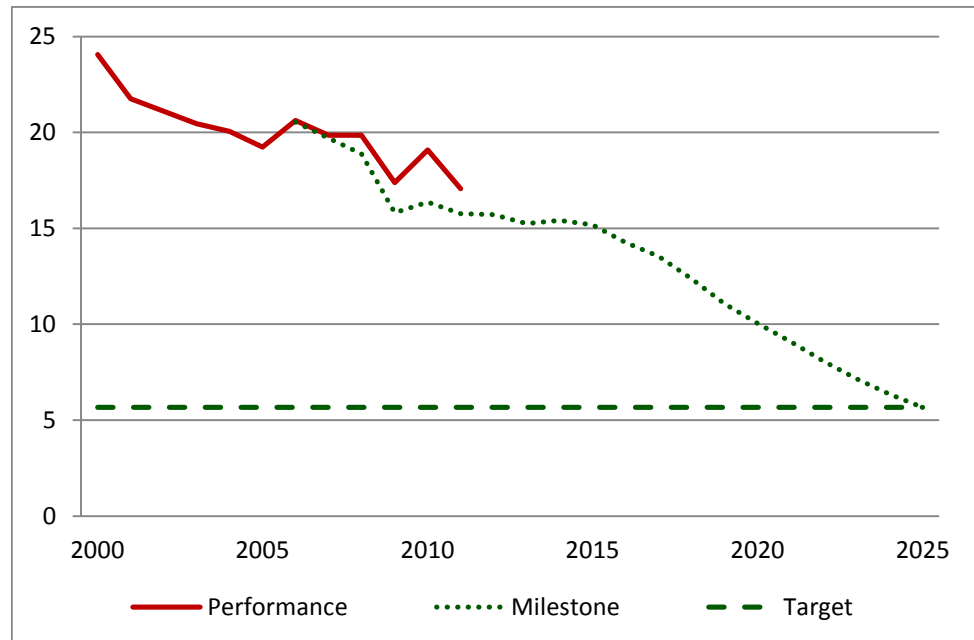
The Mayor's milestones and target, and workplace emissions to 2011, are shown below in Table 5 and Chart 3.

Table 5: Workplaces emissions (MtCO₂ per year)

	Baseline 1990	Peak ¹⁹ (2000)	Latest (2011)	Milestone 2015	Milestone 2020	Component target 2025
Performance	19.74	24.06	17.06			
Milestone/target			15.76	15.17	9.95	5.67

Sources: Performance from LEGGI, milestones from CCMES and Roadmap

Chart 3: Workplace emissions are clearly behind milestones (MtCO₂)



Source: CCMES (and Roadmap and 2014 annual report), LEGGI

GLA programmes

The GLA's programmes to re-fit workplaces adapted the promotional and enabling aspects of the RE:NEW programme to the workplaces sector in innovative ways.

However, they are a considerable way off the 2015 milestone. The targets, milestones, completed retrofits and projects underway or secured (where numbers of buildings and floor space is known) are shown below in Table 6.

Table 6: RE:FIT progress

	Total reported mid-2014	Of 2014 total:		Milestone 2015	Milestone 2020	Target 2025
		Work completed	In progress or secured			
Number of buildings	356	221	135	600		
Public sector floorspace (million m ²)	1.16	0.76	0.4	1.6	6.3	11.0
Private sector floorspace (million m ²)	0	0	0	0	27.0	44.0
CO ₂ saving (tonnes per year)	28,990	18,129	10,861			
Cost saving (per year)	£4.7m	£3.1m	£1.7m			

Source: GLA²⁰

The retrofit programme dates back to 2009; with a year and a half to go until the 2015 milestone, there is still significant work to do. Work must then accelerate significantly again to reach the much more stretching 2020 milestone and 2025 target. The programme must also take off in the private sector, at a still-bigger scale; there is currently a pilot scheme but details of the work have not been confirmed.

Other GLA work has either finished or not yet fully started. The GLA established the Better Buildings Partnership to support the larger commercial workplaces sector, but no longer funds this work. There are no plans to repeat the Green Awards for businesses, which had been planned to be annual. Support to small and medium-sized enterprises (SMEs) is recognised as an important element of the workplaces strategy, but remains at an early stage. There is a target to reach 25,000 SMEs by 2020, but to date under 200 have expressed interest in the main pilot.

Recommendation 2

The Mayor should update the Committee in early 2015 on work to support public sector organisations and businesses, especially SMEs, in energy efficiency.

National actions

There were a number of national-level actions expected in the CCMES, including establishing a national RE:FIT office, providing assistance through the Green Deal, and retrofitting London's government department buildings through RE:FIT.

There is effectively a national RE:FIT office. The Department for Energy and Climate Change (DECC) has grant-funded £450,000 to Local Partnership (LP) to contribute toward the cost of rolling out the RE:FIT framework across the UK. LP is supporting public sector organisations outside London to use the RE:FIT framework, for example, Cambridgeshire County Council and Coventry City Council.

Most government departments are not yet participating in RE:FIT. DECC has just completed retrofitting works using the RE:FIT programme at 3 Whitehall Place and 55 Whitehall. The Ministry of Justice has also signed up to the programme but its retrofit has not yet been completed.²¹

Recommendation 3

The Mayor should lobby national government more strongly for the workplace retrofit actions on which his strategy depends. The Mayor should report to this Committee what lobbying has been undertaken, what has been the response, and what the implications are for the delivery of the CCMES.

Energy supply

Score	Summary
3/10	<i>The Mayor expects to miss his milestone for decentralised energy generation for 2015. The pipeline of future projects is far short of the delivery needed by 2025.</i>

Background

Most of London's carbon emissions involve the energy supply industry, such as mains gas or electricity (the main exception is transport fuel). In addition to lowering energy use, carbon emissions could be reduced by 'decarbonising' the energy supply: reducing the amount of carbon emitted to deliver each unit of energy.

Energy supply decarbonisation can be achieved by the use of low-carbon energy sources, including solar energy, wind power, nuclear and renewable biofuels.

It can also be achieved by removing inefficiencies in the energy supply system. Electricity is lost in transmission along the cables of the national grid, and conventional power stations waste significant energy in the form of heat. Generating electricity close to where it is used reduces transmission losses. It also gives the opportunity to use waste heat to warm local buildings, known as combined heat and power.

The Mayor therefore has a decentralised energy programme, and a target that 25 per cent of the energy used in London's buildings should come from decentralised sources by 2025.

Targets and performance

The GLA expects to miss its milestone for decentralised energy generation for 2015. The GLA's work in London faces significant challenges, and low-carbon energy is not being delivered at the wider national level either.

Overall emissions from energy supply in 2011 were well on the way to the target for 2015, but the mild weather of 2011 is likely to have

underestimated the energy consumption trends under more usual winter temperatures. Recent national figures suggest that London’s energy emissions may have risen by something like ten per cent in 2012, which would take them over 35 MtCO₂. The Mayor’s milestones and target to reduce emissions from energy supply, and recent emissions figures, are shown in Table 7.

Table 7: Emissions from energy supply (MtCO₂)

	2000	2011	2015	2020	2025
Recorded performance	42.58	32.53			
Target or milestone			30.93	26.55	21.63

Sources: LEGGI and CCMES roadmap

The Mayor’s target is for London to produce 25 per cent of the energy used in its homes and workplaces from decentralised sources by 2025. Table 8 shows the roadmap to this target.

Table 8: Decentralised energy capacity, milestones and target (percentage of expected buildings energy use in 2025)

	2012 performance	2015 milestone	2020 milestone	2025 target
% DE	2.9%	5.6%	14.8%	25%

Sources: CCMES roadmap and GLA

London actions

There has been significant, and welcome, activity on decentralised energy promotion at the London level, which is seen as leading in the UK,²² but without yet achieving the required impact on the market. The GLA has produced a Heat Map, and has conducted other enabling work. The Mayor has investigated tidal power on the Thames, but not found it to be feasible. We also welcome the Mayor’s commitment to produce a spatial plan for energy investment, following publication of the Infrastructure Investment Plan.

A culture change is required, to make the market more receptive to technologies such as district heating.²³ Also, the UK tolerates poorly insulated homes; it must be recognised that tackling poor insulation is a crucial step towards tackling domestic energy bills.

Recommendation 4

The Mayor should more actively promote low-carbon decentralised energy technologies such as district heating and solar energy. He should in particular use his public profile to lead culture change and improve the 'brand' of these technologies.

There is a perceived need for clearer communication of the GLA's decentralised energy work. Energy for London said that although it believed the Decentralised Energy Programme Delivery Unit (DEPDU) had made significant progress, it was difficult to fully determine how it was operating as there had been few, if any, reports.²⁴

The Committee heard from the GLA and DEPDU that there is a pipeline of decentralised energy schemes in various stages of preparation. The whole pipeline represents enough capacity to meet 20 per cent of London's energy demand and would take London most of the way to the 25 per cent target. However, the projects with a 'very high' probability of delivery represent only eight per cent of demand. Also, projects are being brought to market at a very slow rate, so that the DEPDU does not expect London to meet the 2015 milestones for decentralised energy generation.

This Committee is concerned that this pipeline does not amount to 25 per cent of building energy demand, even including projects less than 'very likely' to be delivered. There are necessarily long lead times for the large-scale projects that are expected to deliver most of the 2025 target,²⁵ and inevitably not all of the projects in the pipeline will make it to market. Therefore, there is an urgent need to get more projects at all scales into the pipeline, and to give an indication of the pipeline by size of project, timetable and likelihood of delivery.

Recommendation 5

The Mayor should produce a decentralised energy delivery plan, setting out how the target (25 per cent of the energy for London's buildings from decentralised sources by 2025) will be achieved. There should be annual progress updates.

There are lost opportunities, particularly in solar energy. London has the lowest levels of solar capacity using the Feed-In Tariff of any GB region, even those with smaller populations and cloudier climates like Wales.²⁶ The Committee heard that London has only 43 Megawatts (MW) of

installed solar generating capacity, whereas the potential for solar capacity nationwide is 3,000 MW.²⁷ Community energy groups feel their sector can unlock this potential, by providing sites, enabling access to capital finance and getting local people involved both as consumers and as stakeholders in the ownership and management of the schemes.

Recommendation 6

The Mayor should support community-led and mid-scale solar schemes. A strategic direction on solar energy should be given in the decentralised energy delivery plan, informed by consultation with experts on solar energy, including from the local authority and community energy sectors.

National actions

The Mayor’s CCMES assumes that the carbon intensity of national grid electricity reduces rapidly, in line with the government’s ‘extended ambition’ policy scenario. Carbon intensity is the amount of CO₂ produced to supply a given amount of electricity. The CCMES roadmap gives milestones for the grid carbon intensity required to deliver the carbon savings in the strategy; these are shown in Table 9, along with the reported carbon intensity in recent years.

Table 9: National grid carbon intensity (g CO₂ per KWh)

	2010	2012	2015	2020	2025
Performance	520	490			
Assumption			437	323	152

Sources: CCMES Roadmap for assumptions, CCMES 2014 Annual Report for performance

Grid carbon intensity to 2012 was not falling at quite the rate assumed in this scenario: if a reduction of 15g per year continued, the 2015 milestone would be narrowly missed, and the 2020 and 2025 figures would be missed by wider margins.

If these assumptions on grid decarbonisation are not fulfilled, it will be much more difficult for the Mayor to deliver on the CCMES, which relies on government action in energy supply for over a quarter (7.10 MtCO₂) of its overall annual carbon savings by 2025.

Recommendation 7

The Mayor should lobby national government more strongly for the grid decarbonisation actions on which his strategy depends. The Mayor should report to this Committee what lobbying has been undertaken, what has been the response, and what the implications are for the delivery of the CCMES.

Homes retrofit

Score	Summary
3/10	<i>London is behind its domestic carbon reduction targets and the Mayor does not expect to meet his 2015 target for retrofitting homes. On current performance, it is difficult to see grounds for confidence that he will meet his 2025 target.</i>

Background

Domestic energy efficiency is crucial to delivering the Mayor's carbon reduction ambitions. It is estimated that 36 per cent of London's emissions come from domestic properties. Energy efficiency also reduces energy bills, an important consideration for Londoners as finances continue to be tight for many households.

Energy efficiency can be improved by building energy-efficient new homes, and by retrofitting energy efficiency measures to existing homes. As it is projected that at least 80 per cent of London's existing buildings will still be in use by 2050, retrofit is an essential part of the strategy.

The Mayor funds the RE:NEW domestic retrofit programme, with strategic targets for the numbers of homes reached and the numbers of efficiency measures fitted. The targets are to be delivered both through the RE:NEW programme and through activity in the wider market.

Targets and performance

In 2011, London was close to the homes emissions milestone, but emissions for 2011 were unusually low because of the mild winter weather. Because of the large heating component, homes emissions are particularly weather-sensitive; it is likely that emissions for 2012 and 2013 will prove to be higher than in 2011.

Nationally, the weather adjustment for residential emissions for 2011 was plus 14 per cent. If applied to London's 2011 emissions this would make

the adjusted figure over 16 MtCO₂ – in excess of the 1990 baseline, and closer to the 2003 peak than the 2015 milestone. Recently-published government figures do show that London’s domestic emissions rose by 11 per cent from 2011 to 2012 and therefore fell further behind the Mayoral milestone.

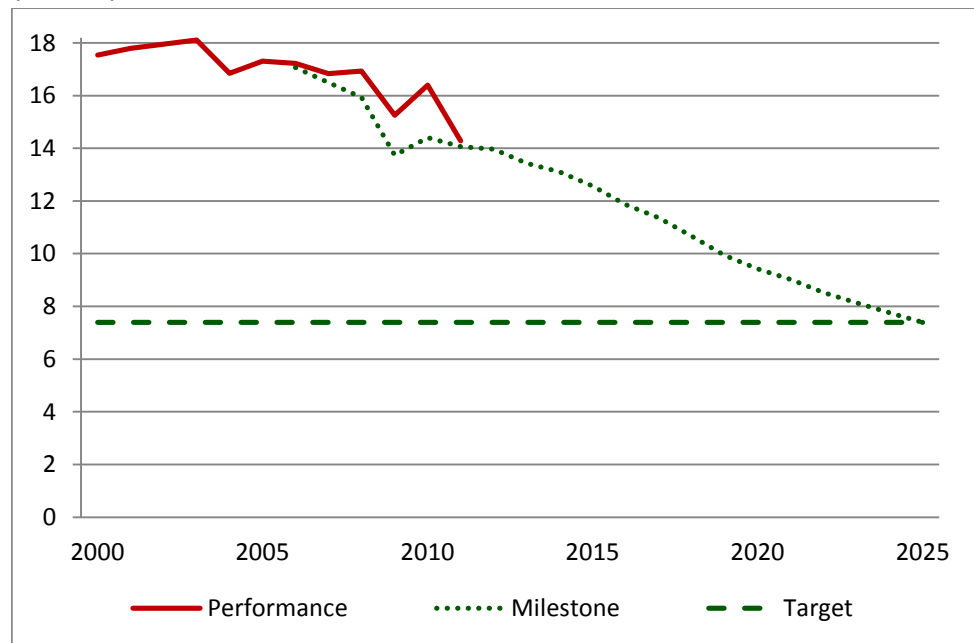
The Mayor’s target and milestones in homes emissions are shown in Table 10 and chart 4.

Table 10: Homes emissions (MtCO₂ per year)

	Baseline 1990	Peak (2003)	Latest (2011)	Milestone 2015	Milestone 2020	Component target 2025
Performance	15.84	18.11	14.28			
Milestone/target			14.07	12.56	9.37	7.39

Sources: CCMES and roadmap, CCMES 2014 annual report²⁸, LEGGI.

Chart 4: Homes emissions are behind Mayoral milestones (MtCO₂)



Source: LEGGI, CCMES

Mayoral programmes

The Mayor's main programme for domestic retrofit is the RE:NEW programme. This committee has always been supportive of the programme, which embodies good practice in domestic retrofit, including its whole-house approach, active promotion to householders and landlords, and targeting groups of homes for economies of scale. Indeed, the development of the programme was informed by this Committee's 2008 report, *Lagging Behind*, and its investigation of a similar model from Kirklees in West Yorkshire.²⁹ The Committee joined the Mayor and London Councils in lobbying for similar features to be included in the current national Green Deal.³⁰

However, the GLA is not projecting to meet its 2015 target for retrofitting homes. The Mayoral target and milestones are shown in Table 11, along with the recorded performance to date and the expectations for the next phase of the RE:NEW programme.

Table 11: Homes retrofitted (million homes)

	2012	2015	2017	2020	2025
Recorded or expected performance	0.4		1.1		
Target or milestone	0.2	1.2		2.4	2.9

Sources: CCMES roadmap and GLA

The figures given cover both homes reached directly by the RE:NEW programme, and homes reached by the retrofit industry with little or no involvement of RE:NEW. The RE:NEW programme to the end of 2012 delivered 100,000 retrofits, while the wider industry delivered a further 300,000 retrofits, thereby more than meeting the target of 200,000 for the end of 2012.

However, since 2012 the programme has not accelerated sufficiently and is now falling behind. The GLA expects that the next phase of RE:NEW³¹ will support 175,000 retrofits directly, and that the wider industry will continue to retrofit additional homes in a similar ratio – about three times as many as the direct RE:NEW work. This would suggest that 700,000 more homes would be retrofitted by 2017, taking the cumulative total to an estimated 1.1 million. Thus, the milestone of 1.2 million homes to be reached by the end of 2015 will be significantly missed. And, given similar rates of progress of about 230,000 homes per year, so would the milestone of 2.4 million homes by the end of 2020.

Moreover, there are questions over the demand for retrofitting outside of subsidised programmes, so even the 1.1 million homes projection may be optimistic. The progress to 2012 was supported by grants available from energy companies for efficiency works. Since then, these schemes have been replaced for most households by the Green Deal, which finances works with an interest-bearing loan, payable from the energy bill and tied to the property. Only certain households qualify for the new grant subsidies under the Energy Company Obligation (ECO), which has a smaller amount of funding available annually than did the previous schemes, and there is limited support to negotiate the application process. The level of retrofit work dropped sharply when the Green Deal and ECO replaced the previous regime. The annual size of the ECO scheme has recently been reduced and some measures such as solid wall insulation cut back in particular. Cash grants to encourage Green Deal take-up have recently been announced, but it remains to be seen what effect these will have.³²

There is also a need to ensure that the homes reached install sufficient carbon-saving measures. The CCMES roadmap has further milestones for the installation of ‘easy measures’ (such as draught excluders and hot water tank jackets), loft and cavity wall insulation, and solid wall insulation. On the available information, it appears that the major measures such as loft and cavity wall insulation may be further still behind the targets, than the number of homes reached. These are shown in Table 12 below.

Table 12: Energy efficiency measures retrofitted (million measures³³)

	2012 performance	2015 milestone	2016/17 expectation	2020 milestone	2025 target
Easy measures	Not known	9.00	Not known	11.40	15.70
Loft/cavity wall insulation	Potentially ³⁴ approx 0.17	1.70	Potentially ³⁵ approx 0.47	1.70	1.70
Solid wall insulation	Not known	0.06	Not known	0.586	0.731

Sources: CCMES roadmap

Local actions

Most of the retrofit that is currently being delivered is through large social landlords, including local authorities.

These providers feel a need for more help. The HECA Forum, which represents local authority energy efficiency officers, has said that boroughs would welcome more support from the Mayor, such as help to develop projects or overcome planning issues. It said boroughs find there is too much focus on data monitoring, and not enough practical support, from the RE:NEW programme.

The GLA is hoping to do more when more funding is available: there is a bid to the European ELENA fund for £2.6 million for the next, three-year, phase of RE:NEW. The GLA said it would consider borough needs when appointing the team for the next phase, working with the HECA Forum and taking feedback from its local authority group.³⁶

Recommendation 8

The Mayor should consult with London borough retrofit practitioners, through representative bodies such as the London HECA Forum, and set out how the work of the RE:NEW team will be aligned more closely with their needs as a result.

National actions

Government actions on which the CCMES depends are in several cases in jeopardy or not being delivered. This includes adopting the Mayor's proposals for the Green Deal and ECO, changing planning rules that block retrofitting, promoting solid wall insulation to the public and successfully rolling out the Green Deal.

However, some actions have been delivered, such as defining fuel poverty to take into account housing costs, and delivering a greater share of retrofit subsidy to London under ECO than under previous schemes. Thus, the Mayor should escalate his lobbying of government for actions at a national level that would enable the delivery of the CCMES in London.

Recommendation 9

The Mayor should lobby government more strongly for the national actions required by the CCMES, and report to this Committee what lobbying work has been undertaken and what has been the response.

Minority opinion from the GLA Conservative Group

The GLA Conservative Group is unable to support this report, as we do not feel that it is a fair reflection of the Mayor's performance in key areas – particularly regarding workplace retrofits, energy and household retrofits – and therefore on the overall score.

We strongly feel that the ground breaking achievements of the Mayor's RE:NEW and RE:FIT retrofit programmes, for homes and public buildings respectively, have not been fully recognised. Over 100,000 homes have been retrofitted under the RE:NEW programme, whilst 356 public buildings have so far benefitted from RE:FIT, both of which are significant results in difficult areas. Clearly we need to make sure that progress is sustained, and make suggestions where necessary, but such observations need to be put into their proper context.

On energy, we note that the scoring and commentary for this item is far more negative than that given in by the Institution of Civil Engineers in its recent report . We do not feel that sufficient weight is given in this report to the Mayor's efforts to deliver new energy infrastructure through the planning system, especially heat networks, which can take a long time to bear fruit.

Therefore, for these reasons, GLA Conservative Members wish to make clear that this report does not have our support.

Appendix 1 Recommendations

Recommendation 1

Transport for London, in its forthcoming energy strategy, should set out how it will power the Tube, including:

- How TfL's buying power could stimulate low-carbon decentralised energy in London, and reduce TfL's carbon emissions.
- How much TfL could invest in its own low-carbon energy capacity, reducing both carbon emissions and its exposure to energy price volatility.

Recommendation 2

The Mayor should update the Committee in early 2015 on work to support public sector organisations and businesses, especially SMEs, in energy efficiency.

Recommendation 3

The Mayor should lobby national government more strongly for the workplace retrofit actions on which his strategy depends. The Mayor should report to this Committee what lobbying has been undertaken, what has been the response, and what the implications are for the delivery of the CCMES.

Recommendation 4

The Mayor should more actively promote low-carbon decentralised energy technologies such as district heating and solar energy. He should in particular use his public profile to lead culture change and improve the 'brand' of these technologies.

Recommendation 5

The Mayor should produce a decentralised energy delivery plan, setting out how the target (25 per cent of the energy for London's buildings from decentralised sources by 2025) will be achieved. There should be annual progress updates.

Recommendation 6

The Mayor should support community-led and mid-scale solar schemes. A strategic direction on solar energy should be given in the decentralised energy delivery plan, informed by consultation with experts on solar energy, including from the local authority and community energy sectors.

Recommendation 7

The Mayor should lobby national government more strongly for the grid decarbonisation actions on which his strategy depends. The Mayor should report to this Committee what lobbying has been undertaken, what has been the response, and what the implications are for the delivery of the CCMES.

Recommendation 8

The Mayor should consult with London borough retrofit practitioners, through representative bodies such as the London HECA Forum, and set out how the work of the RE:NEW team will be aligned more closely with their needs as a result.

Recommendation 9

The Mayor should lobby government more strongly for the national actions required by the CCMES, and report to this Committee what lobbying work has been undertaken and what has been the response.

Endnotes

¹ The overall score reflects both the scores for specific carbon-emitting sectors and policy areas, and also a direct comparison of London's overall performance against the Mayor's strategic milestones.

² This reduction is measured with reference to a 1990 baseline; emissions in 2008 (when the Mayor was elected on the 60 per cent pledge) were about 4 per cent higher than the baseline. Following a recommendation by this Committee, the Mayor also adopted a longer-term target to reduce emissions by 80 per cent by 2050, in line with the national target.

³ See the Mayor's Climate Change Mitigation and Energy Strategy (CCMES) <http://www.london.gov.uk/priorities/environment/publications/delivering-londons-energy-future-the-mayors-climate-change-mitigation-and-energy-strategy>. The reduction is measured with reference to a 1990 baseline; emissions in 2008 when the Mayor was elected on the 60 per cent pledge were about 4 per cent higher than the baseline. Following a recommendation by this Committee, the Mayor also adopted a longer-term target to reduce emissions by 80 per cent by 2050, in line with the national target.

⁴ CCMES Roadmap

<http://www.london.gov.uk/priorities/environment/publications/delivering-londons-energy-future-the-mayors-climate-change-mitigation-and-energy-strategy>

⁵ Data from the London Emissions of Greenhouse Gases Inventory (LEGGI)

⁶ Annual data between 1990 and 2000 are not given in the LEGGI data available, so it is possible that the peak in overall emissions was larger and earlier.

⁷ <https://www.gov.uk/government/publications/local-authority-emissions-estimates>. The figures reported are not exactly compatible with the LEGGI figures used in this report, but the direction and size of the change is indicative.

⁸ The weighting is simple: a full weighting of 1.0 is applied to those sectors that directly account for the majority of carbon emissions, and have emissions milestones in the CCMES Road Map (energy supply, home retrofit, transport and workplace retrofit); a reduced weighting of 0.5 is applied to 'economy', which in the terms of the CCMES covers only a limited set of policy actions to support business carbon reduction, and to new building, which over the period 2010-2025 can account for only a small fraction of London's total stock of homes and workplaces.

⁹ <http://www.standard.co.uk/news/mayor/boris-johnson-under-fire-over-pitiful-number-of-homes-built-in-london-last-year-9414410.html>

¹⁰ Annual reduction about 0.27 MtCO₂ per year on average; though again, ambition is lower for transport than for other sectors: a 48 per cent reduction by 2025, compared with a 53 per cent reduction for homes and 71 per cent for workplaces

¹¹ Society of Motor Manufacturers and Traders <http://www.smmmt.co.uk/co2report/>

¹² Measured in vehicle km. *Travel in London* report 6

<https://www.tfl.gov.uk/cdn/static/cms/documents/travel-in-london-report-6.pdf>

¹³ *Bus services in London* Transport Committee, October 2013

<http://www.london.gov.uk/mayor-assembly/london-assembly/publications/bus-services-in-london>

¹⁴ <http://www.bbc.co.uk/news/uk-england-london-27955893>

¹⁵ <http://www.prodrivermags.com/news/345-amsterdam-taxi-firm-adds-zero-emission-nissan-e-nv200-to-leaf-fleet> ;

http://www.nyc.gov/html/tlc/html/news/initiative_ev_pilot_program.shtml

¹⁶ <http://www.bbc.co.uk/news/uk-england-london-25756929>

¹⁷ <https://www.london.gov.uk/media/mayor-press-releases/2013/02/mayor-of-london-announces-game-changer-for-air-quality-in-the> and see the Environment Committee

meeting of February 2014

<http://www.london.gov.uk/moderngov/ieListDocuments.aspx?CId=305&MId=4971>

¹⁸ <https://www.london.gov.uk/priorities/environment/publications/london-low-carbon-market-snapshot-2013>

¹⁹ Annual data between 1990 and 2000 are not given in the LEGGI data available, so it is possible that the peak in overall emissions was larger and earlier.

²⁰ CCMES roadmap, RE:FIT website <http://www.refit.org.uk/what-refit/refit-achievements/> and information supplied by GLA RE:FIT team by emails, 16 June 2014

²¹ Mayoral press release December 2012 <http://www.london.gov.uk/media/mayor-press-releases/2012/12/millions-more-under-refit-programme-to-be-saved-as-capitals>

²² See written contribution to this investigation from SSE

²³ Environment Committee meeting, 26 March 2014

²⁴ Written contribution from Energy for London

²⁵ CCMES Roadmap

²⁶ Ofgem data <https://www.ofgem.gov.uk/ofgem-publications/86859/fitupdatereportissue15.pdf>. Energy for London also advised that more support for solar energy was needed to avoid London losing out on FIT income

²⁷ Environment Committee meeting, 26 March 2014

²⁸ <https://www.london.gov.uk/priorities/environment/publications/the-mayor-s-climate-change-mitigation-and-energy-annual-report>

²⁹ <http://www.london.gov.uk/mayor-assembly/london-assembly/publications/lagging-behind-insulating-homes-in-london>

³⁰ <http://www.london.gov.uk/mayor-assembly/london-assembly/publications/environment-committee-paper-on-the-energy-bill>

³¹ The work has three-year funding of £2.8 million, of which 90 per cent has been obtained as a grant from the European ELENA programme. Procurement is being finalised at the time of drafting this report, and the three-year contract should begin later in 2014.

³² Details on issues with the Green Deal and ECO are available in evidence to this review from Energise London, National Energy Action, ScottishPower, SSE, and the HECA Forum

³³ The numbers of measures installed exceed in some cases the number of homes reached, because each home is likely to take several easy measures, and may have both loft and wall insulation

³⁴ Information from the GLA is that 23,000 homes had 'further measures' installed by the RE:NEW programme to 2012, out of 107,000 homes reached. Further measures were mainly loft and cavity wall insulation. Assuming that each of these homes had both of those measures, that would be about 43,000 measures per 100,000 homes reached. Assuming that this rate is replicated across the approx. 400,000 homes reached including the wider market gives about 172,000 measures. Numbers of easy measures were not available in time for publication of this report.

³⁵ Assuming the same rates of measures per home across the 1.1 million homes to be reached by the end of the RE:NEW three year phase would give 473,000 measures. Some may be solid wall insulation rather than cavity.

³⁶ Environment Committee meeting of 6 February 2014; see also written contributions to this investigation from the HECA Forum and the Royal Borough of Kingston