



DELIVERING LONDON'S ENERGY FUTURE: EXECUTIVE SUMMARY

THE MAYOR'S CLIMATE CHANGE MITIGATION AND ENERGY STRATEGY
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MAYOR OF LONDON

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EXECUTIVE SUMMARY

1 Introduction

The Mayor's Climate Change Mitigation and Energy strategy is one of eight environmental strategies setting out the action the Mayor is taking, and encouraging others to take, to green London, retrofit London, and provide cleaner air for London. This strategy focuses on reducing CO₂ emissions to mitigate climate change, securing a low carbon energy supply for London, and moving London to a thriving low carbon capital. It forms a central part of the Mayor's goal of retrofitting London. The Mayor's activity to achieve this is well underway. His programmes are already making real cuts in CO₂ emissions, improving quality of life for Londoners, and creating economic opportunities for the capital.

2 Objectives of the strategy

The Mayor has set four objectives for this strategy:

- **To reduce London's CO₂ emissions to mitigate climate change** - If global emissions of greenhouse gases (GHGs) are left unchecked, average global temperatures could rise by up to 6°C by the end of the century. This will leave London vulnerable to floods, droughts and heat waves. Scientific evidence suggests that to avoid these impacts on a catastrophic scale, global emissions of GHGs will need to fall to a level that is no more than 50 per cent of 1990 levels by 2050ⁱ. This strategy sets out how the Mayor is ensuring London is playing its part in tackling this global issue.
- **To maximise economic opportunities from the transition to a low carbon capital** - The global market for low carbon goods and services is around £3 trillion. In addition to this, it is estimated that if global CO₂ emission targets are met, this market could increase by at least £368 billion per year through to 2030ⁱⁱ. London is well placed to capitalise on this economic opportunity. Despite the economic downturn, the value of the capital's low carbon and environmental goods and services sector grew by over four per cent per year, with sales to a value of over £23 billion in 2009-10ⁱⁱⁱ. The Mayor is using London's inherent strengths and his climate change mitigation programmes to build on this.
- **To ensure a secure and reliable energy supply for London** - Without significant investment in its energy infrastructure (an estimated £200 billion over the next ten years) the UK faces an energy gap in the near future. Although a range of infrastructure is planned, under construction, or in development, the scale of the UK's short-term infrastructure requirement is very significant, with planning and funding hurdles to overcome. If this infrastructure is not delivered, there is potential for a gap

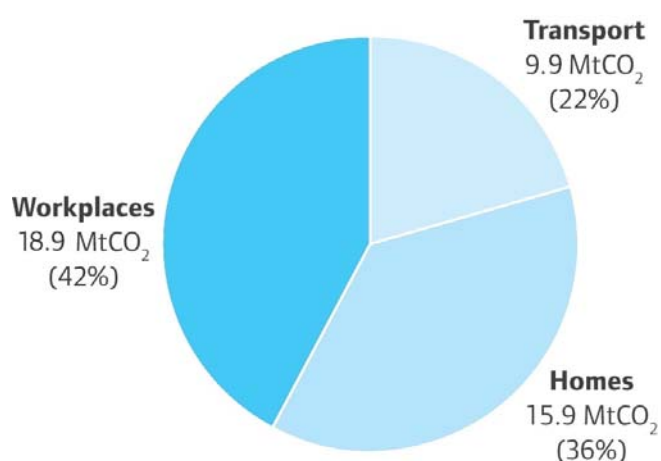
between electricity generation capacity and electricity peak demand by 2016 nationally^{iv}. The Mayor is using his energy efficiency and energy supply programmes to reduce London's vulnerability to the risks of an energy gap. These programmes could easily fill London's share of the gap, and significantly contribute towards plugging the national energy gap.

- **To meet, and where possible exceed, national climate change and energy objectives** - Government has set out its priorities for tackling climate change, including the development of the Green Deal (a pay-as-you-save model to retrofit the UK's homes and businesses), reform of the electricity market, and the establishment of a Green Investment Bank to provide funding for investment in environmental infrastructure projects. This strategy has been developed to meet and, where possible, exceed national and international climate change and energy objectives.

3 The challenge

The scale of the challenge London faces in reducing CO₂ emissions is significant, but achievable. The most recent measurement of London's CO₂ emissions shows that in 2008 they were 44.71 million tonnes (MtCO₂)^v, which is 8.5 per cent of the UK's total CO₂ emissions. This is approximately level to London's CO₂ emissions in 1990, having fallen from a peak in 2000. Figure 1 breaks down London's CO₂ emissions by sector in 2008, and shows that nearly 80 per cent of CO₂ emissions originate from energy supply to, and energy use in, buildings (homes and workplaces). Transport accounts for 22 per cent of London's CO₂ emissions.

If no further action were to be taken to reduce London's CO₂ emissions beyond that already occurring, it is predicted that CO₂ emissions in London would fall to 11 per cent below 1990 levels by 2025. This would not be enough for London to make its contribution to global CO₂ emissions reduction targets. Further action is therefore required, and although London's relative contribution to global GHGs is small, as a world city, it has an important leadership role to play in reducing emissions and moving to new models of energy generation and consumption.

Figure 1 Breakdown of London's CO₂ emissions by sector (2008)

Source: LEGGI 2008

4 CO₂ emissions reduction targets

The Mayor has set targets to reduce CO₂ emissions in London which aim to drive the scale of activity required to deliver his objectives. These targets are based on what is achievable with further commitment from government and investment from the private sector. Table 1 sets out the Mayor's targets.

Table 1 The Mayor's CO₂ emissions reduction targets in London

Target year	Target CO ₂ emissions reduction on 1990 levels
2015 (interim target)	20 per cent
2020 (interim target)	40 per cent
2025	60 per cent
2050	At least 80 per cent

This strategy takes committed government action as a starting point for reducing CO₂ emissions in London. It then looks to understand how London can make the most of this, and where even more can be achieved through Mayoral action. It then sets out where further action is required from government.

5 Minimising London's CO₂ emissions: The Mayor's actions

The Mayor's activities to reduce CO₂ emissions in London are already well underway. His programmes are delivering real results on the ground, and are ready to be scaled-up rapidly.

Given the huge environmental and economic opportunities of reducing London's CO₂ emissions, the pace of delivery of climate change mitigation programmes needs to be much faster. The Mayor's approach is to kick-start action through directly funded programmes to catalyse the scale of activity required. These programmes are focussing on large-scale delivery, investing public money to demonstrate the viability of programmes to attract private sector investment, and enabling and empowering London to make low carbon choices. Working with other cities, London can then roll out these approaches more broadly both within the UK and internationally, through programmes such as RE:FIT and the C40 electric vehicle initiative.

Retrofitting London

London's existing buildings are responsible for nearly 80 per cent of London's CO₂ emissions, and with 80 per cent of them likely to still be standing in 2050, retrofitting these buildings is a priority for London. To maximise CO₂ emissions reductions in the most cost-effective ways, the Mayor's approach is to retrofit these buildings with energy efficiency and energy supply measures through the following programmes tackling major sectors:

- **RE:CONNECT** - This programme, for London's communities, consists of ten low carbon zones in London, each of which has signed-up to deliver a 20.12 per cent reduction in CO₂ emissions by 2012. The zones take a novel approach to community engagement, aiming to significantly increase uptake of energy efficiency and energy supply programmes and measures in homes, workplaces and other community buildings by concentrating activity at a neighbourhood level. If successful, the Mayor will explore how to extend these to other neighbourhoods.



- **RE:NEW** - This programme, for London's homes, is aiming to retrofit 1.2 million homes by 2015, the largest programme of its kind in London. It takes an area-based,



door-to-door, hassle-free approach to home energy efficiency retrofitting and is delivered through and with the London boroughs. Eleven-thousand homes have already been retrofitted, with a total of 55,000 due by end of March 2012. The Mayor is working to integrate RE:NEW with new energy efficiency and energy supply funding streams, such as the Green Deal and the Feed-in Tariff, so retrofitting can be free upfront for all homes through a pay-as-you-save model, offered to all London homes by 2030.

- **RE:FIT** - This programme, for London's workplaces, is retrofitting London's public sector buildings. It has already secured guaranteed energy savings of £1 million per year for the GLA group from 42 pilot buildings. The model is available to every public sector organisation in London. One-hundred-and-forty organisations have already shown interest in the model to date, with 200 buildings committed to be retrofitted, to the combined value of over £35 million.



- **Decentralised energy programme** - This programme is deploying new low carbon energy supply infrastructure in London. The Mayor has already undertaken the first ever decentralised energy masterplanning exercise across London and is now supporting the commercialisation of large-scale decentralised energy projects which can heat and power London's existing and new buildings more carbon-efficiently. An expert team is offering commercial and legal advice, helping to secure the investment needed to deliver these projects on a large scale. The London Waste and Recycling Board is also investing in the development of waste-to-energy infrastructure that can generate renewable heat and power, helping London to reduce the carbon footprint of its waste.

Driving down emissions from transport

Although emissions from transport account for only 22 per cent of London's total CO₂ emissions, switching to more carbon efficient modes of transport and using new ultra-low carbon vehicles can not only minimise CO₂ emissions, but can also improve air quality, and quality of life for Londoners. The Mayor's programmes to deliver this are:

- **Electric vehicle rollout** - London has ambitious plans for electric vehicles and is one of the most advanced cities in the world in delivering those plans. The Mayor wants

London to be the electric vehicle capital of Europe, with new charging infrastructure being rolled out to support the introduction of 100,000 electric vehicles on London's streets.

- **Further use of ultra-low carbon vehicles** - The Mayor is introducing low carbon buses, with 300 hybrid buses coming into service by the end of 2012, including the New Bus for London which has fuel consumption expected to be nearly 40 per cent better than a conventional diesel double decker bus. The Mayor is also working to introduce hydrogen-fuelled vehicles into London and collaborate with the taxi manufacturing industry to develop an affordable taxi capable of zero emission operation by 2020.
- **Moving to more carbon-efficient modes of transport** - Measures in the Mayor's Transport Strategy to reduce London's transport emissions include supporting travel by public transport, unprecedented levels of walking and cycling investment, and energy efficiency measures on the London Underground.

Maximising CO₂ emissions reductions from new development in London

New development provides London with the opportunity to build ever more low carbon infrastructure. The Mayor's new London Plan sets CO₂ emissions reduction targets which are in excess of those in building regulations, making new buildings even more energy efficient and promoting low and zero carbon energy generation.

Making London one of the world's leading low carbon capitals

To maximise the opportunities from switching to a low carbon economy, the Mayor has put in place the following actions:

- **The Green Enterprise District** - Covering six boroughs in east London, this is helping London become a world-leading low carbon capital. It will promote clusters of low carbon businesses and will draw in large-scale investment for innovative low carbon technologies ranging from energy generation to low carbon transport.
 - **The Low Carbon Employment and Skills Programme** - A suite of projects, including the Mayor's London Apprenticeship campaign, which are being delivered with partners, such as the Low Carbon Skills Forum. These will help to enable Londoners to access sustainable employment within London's low carbon economy.
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6 Taking further action

In addition to his directly funded programmes, the Mayor is also encouraging others to take further action. To maximise CO₂ emissions reductions in London requires action from across society. Individuals and businesses need to be empowered to make low carbon choices, and private sector investment will need to be levered to finance the scale of activity required. This strategy therefore sets out where the Mayor will encourage others to take action.

In particular, the objectives of this strategy can only be achieved if government delivers on its ambitions. This strategy therefore sets out the contribution of national policies towards reducing CO₂ emissions in London, as well as how the Mayor will work to ensure that these objectives are met, and where possible exceeded, in London. It also sets out where government will need to go further to ensure that its own ambitions are met.

7 Funding the strategy

More than anything else, to achieve the ambition in this strategy requires financing. It is estimated that to deliver the Mayor's target of reducing CO₂ emissions by 60 per cent of 1990 levels by 2025 will require £40 billion of investment, and to deliver the Mayor's contribution to this will require £14 billion^{vi}. These levels of funding are not something that can, or should, be delivered by the public sector alone. That is why the Mayor is using existing public sector funding streams to attract and unlock private sector investment. This is no different from any other infrastructure investment challenge facing the UK, and London, as one of the world's premier financial centres, should be in an ideal position to grasp this opportunity.

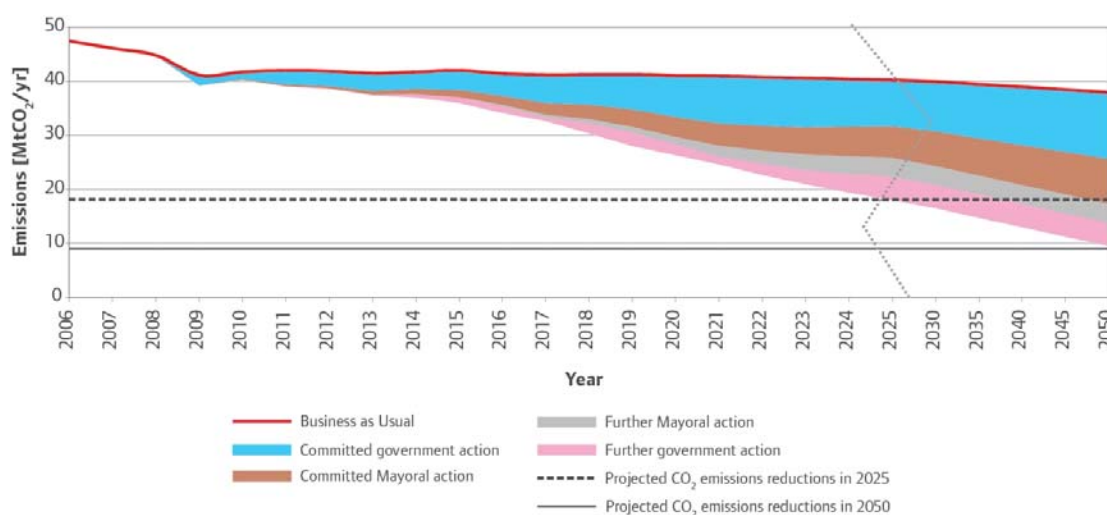
An unprecedented level of investment backs the Mayor's programmes. He is investing over £100 million in climate change programmes, including establishing the London Green Fund to attract further investment. One hundred million pounds of public sector money has been invested in the London Green Fund, initially aiming to attract at least a further £100 million of private sector funding. In the medium-term, the Fund aims to leverage further funding from other government sources, development banks, sovereign funds and infrastructure funds to achieve a fund size upwards of £500 million.

8 Projected CO₂ emissions reductions

If London and the UK can take the actions set out in this strategy, London can ensure that it meets its 2025 targets. Figure 2 breaks down the contribution of government, Mayoral, committed, and further action required to achieve the targets.

There is a window of opportunity to achieve these targets. If government commitment is made now, and further funding is levered and committed by the private sector, London can achieve its aim to be a world leading low carbon capital.

Figure 2 Projected CO₂ emissions reductions in London (2008-2050)



Source: GLA modelling and DECC modelling

Endnotes

ⁱ The Intergovernmental Panel on Climate Change, Fourth Assessment Report (2007)

ⁱⁱ UNEP, Global Trends in Sustainable Energy Investment 2009 – Analysis of Trends and Issues in the Financing of Renewable Energy and Energy Efficiency (2009)

ⁱⁱⁱ INNOVAS, The London Low Carbon Market Snapshot (2011)

^{iv} GLA modelling (2011)

^v The most recent measurement of London's CO₂ emissions was in 2008.

^{vi} Ernst & Young, Prospectus for London, the Low Carbon Capital (2009) (2009 prices)

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Chinese

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Hindi

यदि आप इस दस्तावेज की प्रति अपनी
भाषा में चाहते हैं, तो कृपया निम्नलिखित
नंबर पर फोन करें अथवा नीचे दिये गये
पते पर संपर्क करें

Vietnamese

Nếu bạn muốn có văn bản tài liệu
này bằng ngôn ngữ của mình, hãy
liên hệ theo số điện thoại hoặc địa
chỉ dưới đây.

Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি
(কপি) চান, তা হলে নিচের ফোন নম্বরে
বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος
εγγράφου στη δική σας γλώσσα, παρακαλείστε να
επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυ-
δρομικά στην παρακάτω διεύθυνση.

Urdu

اگر آپ اس دستاویز کی نقل اپنی زبان میں
چاہتے ہیں، تو براہ کرم نیچے دئے گئے نمبر
پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

Turkish

Bu belgenin kendi dilinizde
hazırlanmış bir nüshasını
edinmek için, lütfen aşağıdaki
telefon numarasını arayınız
veya adrese başvurunuz.

Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى
الاتصال برقم الهاتف أو مراسلة العنوان
أدناه

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ
ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ
ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં
જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર
ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

