MAYOR OF LONDON



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EXECUTIVE SUMMARY

Green roofs and walls help insulate Green spaces support biodiversity. More walking and cycling, and fewer Trees provide shade and help cool They improve health and well being buildings, reducing energy demand. vehicles on the street, help reduce traffic the city. They also support biodiversity, help by providing tranquil places to relax noise, improve air quality and reduce reduce flood risk, and help improve in, and places to play, exercise, and Rainwater harvesting will help reduce carbon dioxide emissions. air quality. socialise in. water demand. Energy efficient buildings and local Green and healthy routes to and --Recycling and generating energy Sustainable drainage helps reduce energy generation will reduce carbon from waste will help reduce pressure from schools can help reduce flooding and improves water quality. dioxide emissions and improve air quality. people's exposure to air quality. on resources and landfill. Reuse will help Londoners save money and resources.



Chapter 01 – London's enviroment today

London's environment connects every aspect of life in the city. It is the air Londoners breathe, the water they drink and the parks where they meet and spend time. The state of London's environment affects everyone who lives in and visits the city – it helps Londoners to stay healthy, makes London a good place to work and keeps the city functioning from day to day.

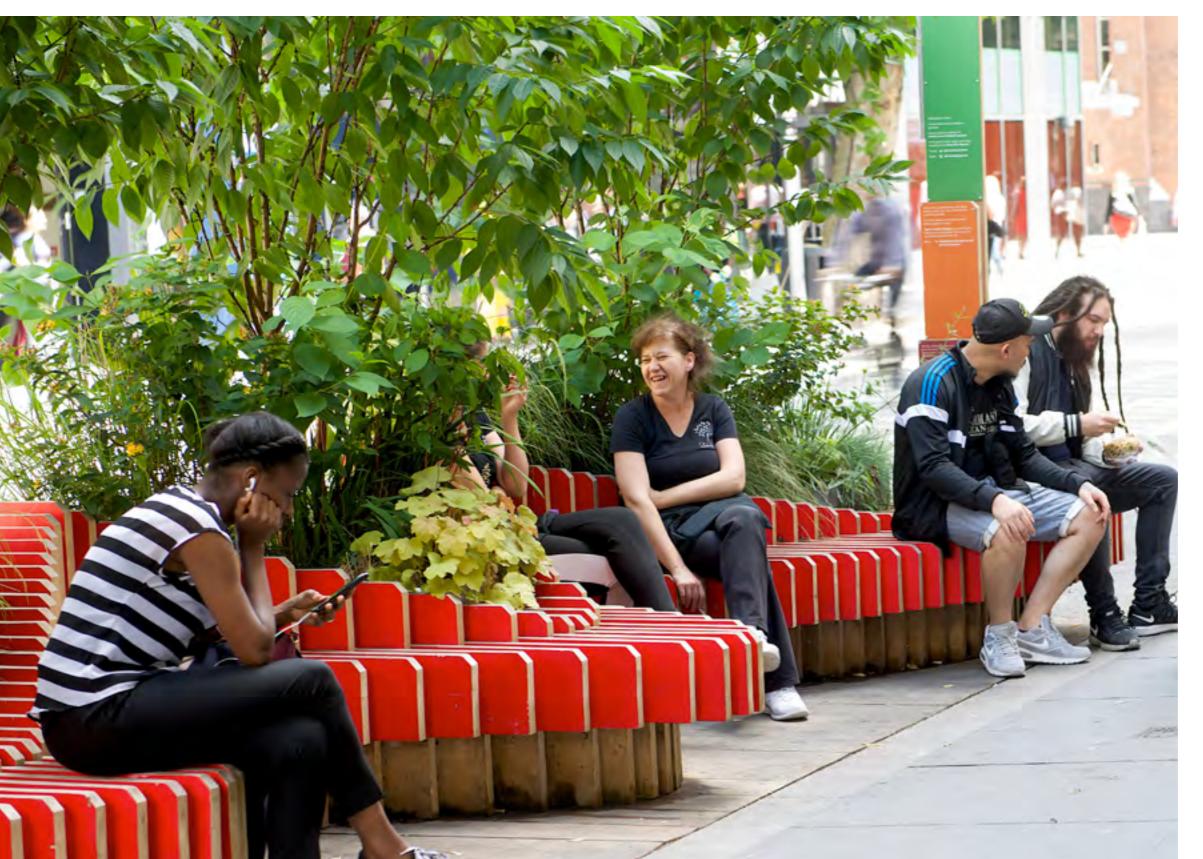
In many ways, London's environment is improving, but in others it is far from what it should be. London's air is so badly polluted that it is responsible for the early deaths of thousands of people every year, and for the poor health of many thousands more. Almost half of Londoners have poor access to public open space, and water demand is set to outstrip supply by 2025. Carbon dioxide emissions are too high, and in some areas the city's electricity infrastructure is approaching full capacity.

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As London gradually grows to be home to over 11 million people by 2050, many of these problems will get worse if action is not taken now. Climate change is already leading to higher temperatures, greater risk of flooding and a greater chance of energy shortages. All of these issues must be addressed if Londoners' quality of life is to be maintained and enhanced.

Improvements to the city's environment have the potential to make sure that London's growth is good growth – transforming Londoners' health and wellbeing, allowing the city's economy to thrive and bringing communities together. To realise London's full potential now and in the future, the city needs to think about its environment in new ways.





Chapter 02 – Transforming London's environment

For the first time, this strategy brings together approaches to every aspect of London's environment, kick starting action that will improve the city's environment right away, while taking the most ambitious view of what is possible in the future. Recognising that the environment has a big influence on the quality of Londoners' lives, it has people and their experience of living, working and spending time in the city at its heart.

London's environmental problems cannot be solved overnight, and creating the environment Londoners deserve will require everyone to work together over many years. This strategy sets out a vision for London in 2050 that will realise the potential of London's environment to support good health and quality of life and to make the city a better place to live, work and do business.

But the city's most pressing environmental challenges are harming Londoners' health and the city's economy right now, and the current pace of change is too slow. So the Mayor is taking a range of immediate actions to improve the environment now, setting London on the path to creating a better future.

The Mayor wants London to be the world's greenest global city. This will mean making it:

Greener: All Londoners should be able to enjoy the very best parks, trees and wildlife. Creating a greener city is good for everyone – it will improve people's health and quality of life, support the success of businesses and attract more visitors to London.

Action will be taken now to plant more trees, make green spaces more accessible, and ensure more green roofs and green features are designed into new developments. Local authorities and community groups will be supported to manage and value London's parks and biodiversity better. This will help to make sure that more than half of London is green by 2050.

Cleaner: Londoners want their city to be clean, attractive and healthy – living in a big city does not mean they should accept a dirty and polluted environment. The Mayor will clean up London's air, water and energy in a way that is fair, protects the health of Londoners, and contributes to the fight against climate change.

Action will be taken now to introduce less polluting buses, deter the most polluting vehicles from being driven in London, and clean up the air around schools and new developments. The rollout of sustainable drainage systems and improvements to the sewerage network will help keep the city's rivers clean. The Mayor's new Energy for Londoners programme will help Londoners and businesses to generate more renewable energy. This will help London's buildings to be powered more cleanly, its entire transport system to become zero emission, and for London to be a zero carbon city by 2050.

Ready for the future: Water, energy and raw materials for the products we consume will be less readily available in the future, and climate change will mean higher temperatures, more intense rainfall and water shortages. The Mayor will make sure the city does not waste valuable resources, is prepared for the future and is safeguarded for future generations.

Action will be taken now to plan for new flood defences and a new water resource for London, as well as to help transport, water and other infrastructure providers better prepare for the changing climate. New smart meters will be rolled out to help Londoners use less energy and water, higher recycling standards will cut waste, and Londoners will be helped to use less packaging. This will help London send zero waste to landfill by 2026 and recycle 65 per cent of its waste by 2030.

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Making this vision a reality will require new approaches that ensure the environment is properly considered by everyone who is working to make London a better place.

Products, energy and other resources will need to be designed and recycled to keep them in use for as long as possible – moving towards a low carbon, circular economy. The full range of benefits of green spaces will need to be properly considered when people are deciding what to invest in. Streets and other public spaces will need to be designed for people to make use of and enjoy the environment around them, rather than just for cars and other vehicles to move through.

This strategy sets out the Mayor's vision for London's environment in six areas, each of which contributes to the functioning and improvement of London life in important ways. Many of them are interconnected, and a solution in one area may provide valuable benefits in many others. By tackling them all and making connections between them, going beyond business as usual to enhance our environment, Londoner's health and the city as a whole will be improved dramatically, helping to create a future London that is fairer and works better for everyone.









AIMS FOR 2050

Climate change and energy

London will be a zero carbon city – with a zero emission transport network and zero carbon buildings.

Waste -

London will be a zero waste city. 65% of London's municipal waste will be recycled.

Adapting to climate change

London and Londoners will be resilient to severe weather and longer-term climate change impacts, such as flooding, heat risk and drought.



Green infrastructure

More than half of London's area will be green, and tree canopy cover will increase by ten per cent by 2050.

Air quality

London will have the best air quality of any major world city by 2050, going beyond the legal requirements to protect human health and minimise inequalities.

Noise

The number of people adversely affected by noise will be reduced, and more quiet and tranquil spaces will be promoted.

Outcomes

Greener

All Londoners should be able to enjoy the very best parks, trees and wildlife. Creating a greener city is good for everyone – it will improve people's health and quality of life, support the success of businesses and attract more visitors to London.

Cleaner

Londoners want their city to be clean, attractive and healthy

– living in a big city does not mean they should accept a dirty
and polluted environment. The Mayor will clean up London's
air, water and energy in a way that is fair, protects the health of
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Ready for the future

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Chapter 03 – Air quality

The quality of London's air is dangerously – and illegally – poor. High levels of damaging pollutants harm human health and quality of life, limiting lung development in childhood and reducing life expectancy. Every year, over 9,000 Londoners' lives end sooner than they should because of air pollution, and around a quarter of primary schools are located in parts of London that breach legal air pollution limits. Air quality is the most pressing environmental threat to the future health of London.

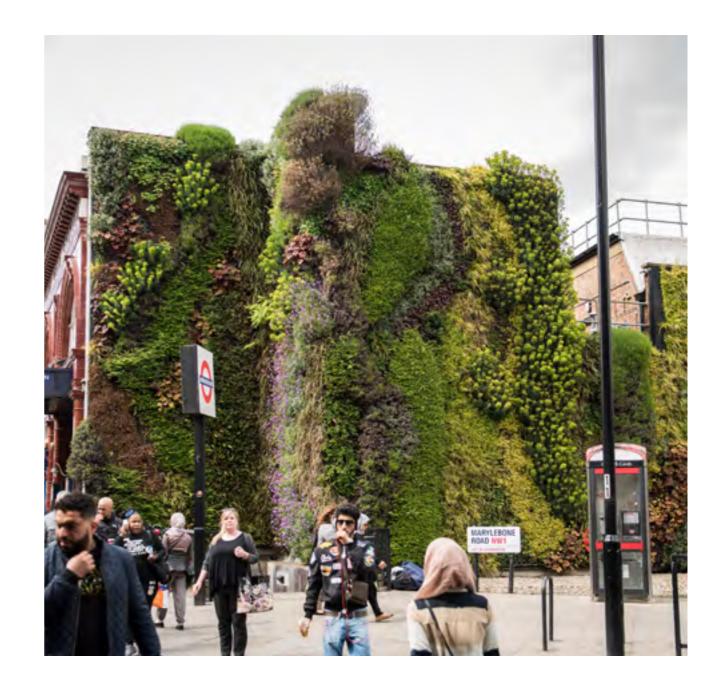
The Mayor wants to dramatically reduce the number of Londoners whose lives are blighted by poor air quality.

Because the impacts of air pollution affect the poorest and most vulnerable people the most, doing so will also make London a fairer place.

"The Mayor wants to dramatically reduce the number of Londoners whose lives are blighted by poor air quality."

The Mayor aims for London to have the best air quality of any major world city by 2050, going beyond the legal requirements to protect human health and minimise inequalities.

People's exposure to poor air can be reduced immediately through local action – children are particularly vulnerable to the effects of bad air as their lungs develop, so reducing exposure is especially important at places like schools. Meanwhile, longerterm efforts to tackle the sources of air pollution will be prioritised, including by reducing car use and switching to cleaner fuels, to ensure that London's entire transport system is zero emission by 2050. Non-transport emissions such as those from construction or the river constitute half of the pollution problem in London and are a growing issue. London cannot act alone but has to work with the government and other partners to ensure that direct action is taken at every level to tackle all sources of harmful emissions.





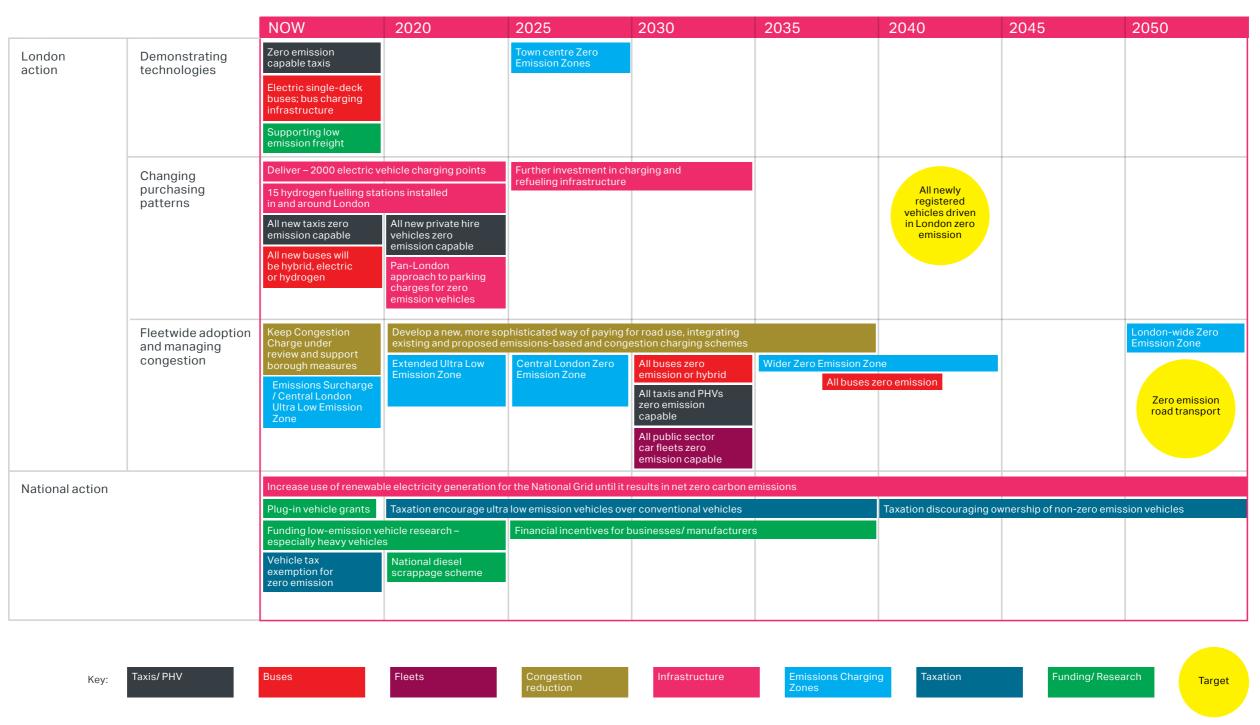
The Mayor will:

- clean up London's transport system and phase out fossil fuels including diesel, making the whole bus fleet zero emission by 2037 at the latest and introducing the Ultra Low Emission Zone by 2019 to deter the most polluting vehicles from entering London
- consider introducing a new Air Quality Positive standard so new building developments contribute to cleaning London's air
- use the planning system to help ensure that new schools and other buildings that will be used by people who are particularly vulnerable to pollutants are not located in areas of poor air quality
- fund the implementation of air quality plans that will help at least 50 schools in some of London's most polluted areas reduce their pupils' exposure to poor air

- provide more information to Londoners on when air pollution is bad, with guidance on monitors, and give people with fire places or wood burning stoves better information on which to use so they don't make air pollution worse
- set even tighter long-term air quality standards based on the best health evidence to make sure Londoners can breathe the cleanest air and start addressing the problem of indoor air quality
- seek powers so London can enforce controls on air pollution from construction machinery, the river and other sources.

By starting work now as well as planning for the future, London can and will go beyond legal minimum requirements to clean up London's air as quickly as possible, putting people and their health first.

Road map to zero emission road transport





Chapter 04 – Green infrastructure

As development encroaches on open space and gardens have increasingly been paved over, there has been a gradual loss of green space across London in recent years. Some parts of London have more green spaces than others, but almost half of Londoners have poor access to parks. Councils now have less money to spend on maintaining parks, so their quality has declined in some places. Access to good quality green space and living in greener neighbourhoods can have a big impact on people's health and quality of life, and on how attractive a place London is to live, visit and do business.

As green space has been lost and what remains has in some cases reduced in quality, the range of plants and animals that live in London has decreased. With careful attention, London can be home to a wide range of animal and plant species, but without it, the number and diversity of bird, wildflower and bee species will continue to decline.

"Future plans for the city will account for the full economic value that green infrastructure provides."

To ensure that London's green spaces meet their full potential for improving people's lives, the Mayor wants Londoners to think about how they are planned, designed and managed in a different way – as green infrastructure. Future plans for the city will account for the full economic value that green infrastructure provides – from better physical and mental health and increased property values to reduced flood and heat risk.

The Mayor aims for more than half of London's area to be green and for tree canopy cover to increase by ten per cent by 2050.

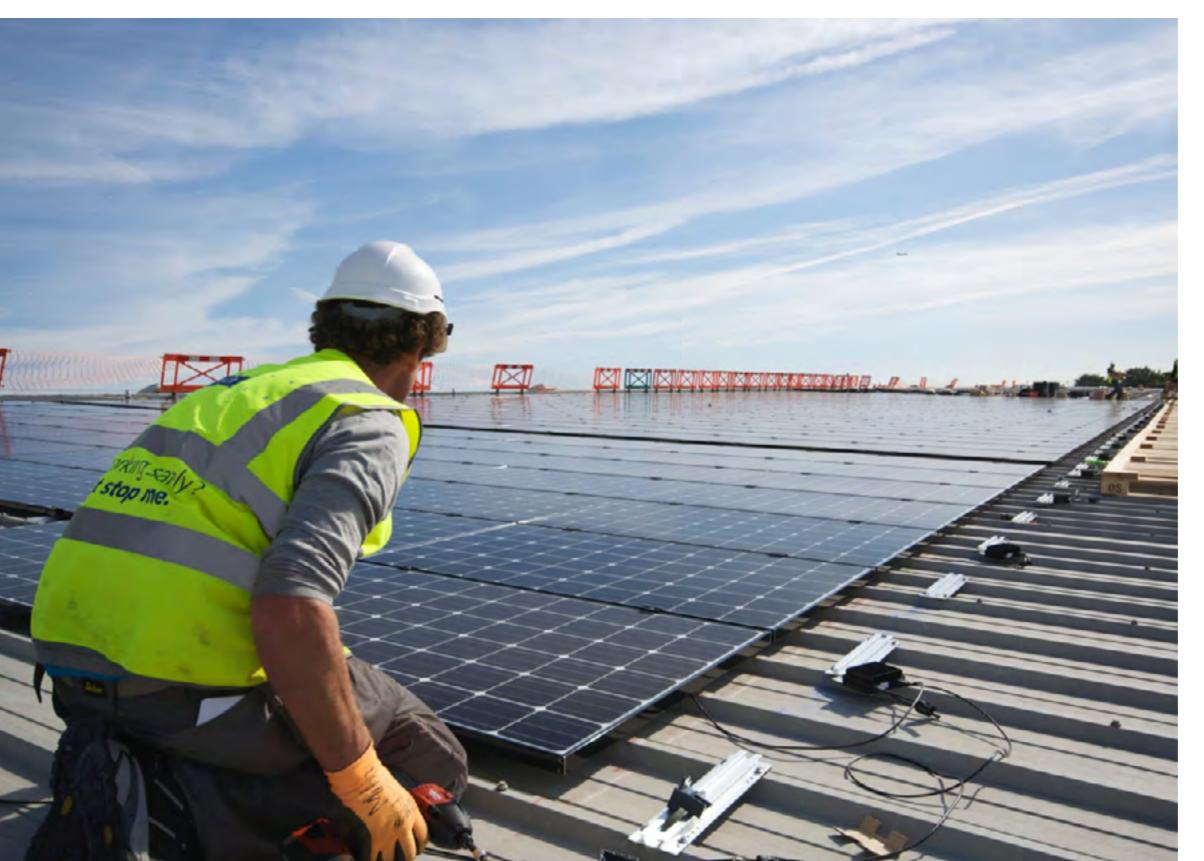
There is limited space for new parks in London so to achieve this, green infrastructure will be promoted through the planning system - to protect and better manage what London has already, and to incorporate new green infrastructure as London grows. Parks will be made more accessible and better connected via greener streets. Buildings themselves will become greener, with green roofs and walls, and drainage systems that allow rainwater to flow back to rivers and streams more naturally. Habitats will be protected and enhanced to ensure green space improvements also serve to increase the diversity of London's plant and animal species.

The Mayor will:

- make London the first National Park
 City, including providing a Greener City
 Fund to support communities to plant
 more trees and improve green spaces
- increase and improve green infrastructure in areas where Londoners, especially children, have the least amount of green space
- use a new Urban Greening Factor to make sure that new developments are greener
- protect London's Green Belt from further development
- set up a London Green Spaces
 Commission to roll out new ways
 for the Mayor, London boroughs,
 community groups and others
 to fund, manage and value green
 spaces and nature
- identify the true economic value of London's green spaces through a Natural Capital Account
- use the planning system to protect London's biodiversity, offsetting any reductions caused by new developments with increases elsewhere.

This radical new approach requires a fundamental change to the way London thinks about its parks and green spaces. Unlocking the value of green infrastructure will help to mitigate the decline in quantity and quality of London's green spaces, improving the lives of everyone who calls the city their home.





Chapter 05 – Climate change mitigation and energy

Although London's greenhouse gas emissions are falling, the city remains over-reliant on the fossil fuels that are a major contributor to global warming and climate change. London is not yet on track to reduce its emissions quickly enough to avoid the worst impacts of climate change, or to meet national and international climate aims.

Nearly three quarters of the energy used in London's homes is for heating and hot water, and the overwhelming majority of this demand is met using gas-fired boilers. Already one in ten electricity substations are approaching full capacity and the redevelopment of large parts of the city will increase demand for energy and the infrastructure required to distribute it.

"To ensure that London has the energy supply it needs in the future, and that the city does everything it can to limit its contribution to climate change, the Mayor wants to change the way London produces and consumes its energy."

To ensure that London has the energy supply it needs in the future, and that the city does everything it can to limit its contribution to climate change, the Mayor wants to change the way London produces and consumes its energy. Old systems of heating, cooling and powering buildings using coal and gas must be replaced by cleaner, local renewable energy, and petrol and diesel vehicles must be replaced by zero emission ones. Londoners will also spend less on energy and use less energy overall through better building insulation, more efficient boilers and heating systems, smart technology and better access to more affordable energy tariffs. This will give Londoners secure access to the energy they need.

Many of these solutions will help tackle another pressing challenge in London. One in ten households in the city currently lives in fuel poverty, sometimes meaning they have to choose between heating their home or eating. Children living in damp, mouldy homes are three times more likely to suffer from respiratory illnesses, and providing better insulation so homes can be heated more affordably will help solve this major problem.

The Mayor aims for London to be a zero carbon city by 2050, with energy efficient buildings, clean transport and clean energy.

London's homes and workplaces must be made zero carbon through better designed, more energy efficient buildings. The Mayor's Energy for Londoners programme will take this work forward and help ensure that fuel poverty is tackled while the city's reliance on fossil fuels is reduced. The transport system must become zero emission through reduced car dependency and the use of new, clean technologies.

At the same time, London needs to develop a clean, smart, integrated energy system that makes use of local and renewable energy resources and is fully integrated with the national energy system.

The Mayor will:

- help Londoners cut their energy use by supporting efforts to improve the energy efficiency of homes and public buildings and helping to roll out smart meters
- cut fuel poverty by targeting energy efficiency to low income homes and working with boroughs to enforce regulations for private landlords to improve the energy performance of their properties

- provide technical assistance to help increase the number of homes and businesses connected to communal heat networks that use local energy sources, including energy created from waste
- increase clean energy generation with at least 100 megawatts more solar installed by 2030, through grants to community groups, pilot projects promoting lower cost solar panels, and by putting solar panels on TfL buildings
- supporting programmes to replace old polluting commercial boilers with new cleaner ones
- make sure that new developments are zero carbon from 2019, with clean supplies of energy and high energy efficiency designed in from the start
- tender for the delivery of an energy supply company, aiming to offer fairer energy bills to Londoners as soon as possible
- trial low carbon technologies like heat pumps and batteries and new ways to make expensive insulation more affordable

By taking the bold steps required to face London's energy challenges head on, the city will not only reduce the extent of future climate change impacts, but create a system of energy supply that is secure and more affordable for all, including the most vulnerable.

What is needed to put London on track to zero carbon by 2050

2016 Zero carbon new homes



2016 Central London transport emissions surcharge



2018 Minimum energy effciency performance standards for all rented properties

2019 All new buildings zero carbon



2019 Central London Ultra Low Emission Zone (ULEZ)





2020 Smart meter in every home

2021 ULEZ expanded to inner London for light vehicles

By 2030 UK Government decision on the long term role of natural gas



By 2030 15% of demand met by renewable and community energy Insulation of remaining lofts and cavity walls and replacement of remaining low efficiency gas boilers

2026 Zero

2025 GLA car



2022 40% reduction in carbon emissions over 1990 levels

From **2030** All GLA group heavy vehicles are fossil fuel-free



2030s City wide deployment of low carbon heating systems eg. heat pumps



2037 All bus fleet zero emission

2040

2040s Gas and electricity networks reach zero carbon

2050 2 GW of solar PV installations residual emissions offset 2050 zero emissions from all transport and buildings

2050



Chapter 06 – Waste

Waste has a big impact on the environment both locally and globally. Only half of the 7m tonnes of waste London's homes and businesses produce each year is currently recycled, and landfill capacity is set to run out by 2026. Plastic packaging not only litters London streets, but often finds its way into waterways and oceans, releasing toxic chemicals before breaking down a process that can take centuries. London needs to reduce, reuse and recycle more, to see waste as the valuable resource that it is and to reduce London's increasing waste bill as the city grows.

The Mayor wants to make the disposable economy a thing of the past in London. By planning for materials to be kept in use for as long as possible, London can prevent the unnecessary use of materials and dramatically cut the amount of waste it produces. What waste remains can then be used to generate low carbon energy. This new way of thinking – moving towards a low carbon, circular economy – will turn a problem into an opportunity.

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The Mayor aims to make London a zero waste city. By 2026 no biodegradable or recyclable waste will be sent to landfill and by 2030 65 per cent of London's municipal waste will be recycled.

To achieve this, London will look not just at how it deals with its waste, but at how products are designed and produced, how Londoners use them, and what happens to them after their original use has ended. This will mean helping Londoners to only use what they need, and to reuse things where they can. This will begin with food waste and single-use packaging, like coffee cups and plastic bottles, because these make up 30 per cent of London's municipal waste. Anything that can't be reused will be recycled wherever possible. When recycling is not an option, new technologies will be used to convert waste into renewable energy that will be used to heat and power homes - no new incineration capacity will be needed.

The Mayor will:

- set minimum recycling and food waste standards for London's waste authorities to meet by 2020
- establish stronger rules to cut pollution from managing and disposing of waste in London

- help cut food waste by 20 per cent by 2025 including through new campaigns to make business and Londoners aware of how they can waste less food and recycle more
- work with business to prevent waste in the first place by designing out food waste and unnecessary packaging, including investigating deposit return or community water refill schemes
- promote shared waste collection services to businesses and others to share waste collection services so there are fewer vans congesting and polluting London's streets
- support new businesses that create jobs and help Londoners to reduce, reuse and recycle more
- ensure there are sufficient sites to manage waste in London through the use of the Mayor's planning powers

Working together, London's approach to waste can be transformed, helping to conserve resources and reduce the city's impact on the local and global environment.



Chapter 07 – Adapting to climate change

Climate change is a reality to which London must now adapt to secure a successful future. As climate change brings a rise in sea level and more intense rainfall, flooding will become increasingly likely. With London set for heatwave conditions every summer by the middle of the century, increasing temperatures could make homes, workplaces and public transport uncomfortable for all and dangerous for the most vulnerable. It could also threaten Londoners' access to clean water, as demand is set to outstrip supply in the next few years.

The Mayor wants to plan for London's future, and this means adapting to climate change now, minimising the impacts of unpredictable and changing weather. Because they are likely to affect the most vulnerable people the worst, this also presents an important opportunity to make London a fairer place.

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The Mayor aims for London and Londoners to be resilient to severe weather and longer-term climate change impacts. This will include flooding, heat risk and drought.

Improving the monitoring of climate change impacts and working with the sectors that are most vulnerable will help London to manage the risks climate change poses for infrastructure, public services, buildings and people. Working to reduce the risk of flooding and the impact of any flooding that does occur will help safeguard London from future unpredictable weather. With a fifth of London in the Thames floodplain, further flood defences will be required as the city continues to grow and the sea level rises.

Enhancing the quality of future buildings, providing shade on streets and in other public places, and helping everyone to understand the effects of climate change will protect London against rising temperatures. Improving London's water networks will reduce leaks and ensure the city has the secure and affordable water supply needed to accommodate its future growth.

The Mayor will:

- support London's critical infrastructure and services to be better prepared for flooding, drought and extreme heat, using the latest data to identify where better planning is needed
- make the case for London to have secure and sustainable water resources to meet its needs and that planning for a new Thames Barrier has started in order to protect the city from flooding in the future
- ensure London's water companies report on their actions to reduce water leakages, especially from burst water mains

- provide advice and alerts to help safeguard Londoners during extreme heat and flooding events
- through the planning system make new developments more water efficient and able to combat increased temperatures and flood risk
- work with other agencies to help clean up London's waterways by ensuring water companies stop dirty water and sewage polluting them

Through proper planning, London can defend itself locally against the challenges presented by this global problem, protecting the most vulnerable and making the city a fairer place.



Chapter 08 – Ambient noise

Noise is part of a vibrant city, but excessive noise can damage people's health. Noise can contribute towards a range of physical and mental health problems, disturb sleep and affect people's hearing, communication and learning. Almost 2.4 million people in London are already exposed to noise levels that exceed international guidelines, and the proposed expansion of Heathrow would expose an additional 200,000 people to significant aircraft noise.

The problems that can be created by excessive noise have for too long been accepted as the necessary cost of living in a successful city. But by tackling the causes of ambient noise – persistent noise from transport and industry in the main - London can become a healthier and more pleasant place to live.

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The Mayor aims to improve Londoners' quality of life by reducing the number of people adversely affected by noise and promoting more quiet and tranquil spaces.

Transport creates some of the city's worst noise problems, and planning for less car use and more walking, cycling and public transport use, alongside moving towards zero emission vehicles, will create a quieter city. As the Night Tube and Night Overground allow London's night time economy to continue to grow, noise impacts on London's residents will be monitored and addressed, targeting locations with the highest noise pollution. The Mayor will work with London's councils to consider the noise impacts of new development, and to create more quiet spaces for people to find respite from the hustle and bustle of the city.

The Mayor will:

- oppose the expansion of Heathrow Airport and call on government to better manage noise from helicopters
- establish an ambitious new approach to reducing traffic and car use in the draft Transport Strategy, which will lead to less noise
- cut noise from rail and underground trains on the TfL network through better use of technology and maintenance programmes
- provide respite from noise through more green and tranquil spaces in the city

By ensuring that the problems associated with noise are addressed, the city will become more pleasant and healthier for everyone.



Chapter 09 – Making it happen

Realising the full potential of London's environment could improve the health and quality of life of all Londoners, make London a fairer city and an even more attractive place to do business and keep the city functioning well for decades to come. This strategy sets out an ambitious, integrated approach to doing so – kick starting important action now and in the future, that will transform London's environment.

The benefits of taking this approach will be enormous, but the size of the task should not be underestimated. Doing everything that is needed to realise the Mayor's vision will require the support of national government, including through new policies and new powers and funding for London. Just as importantly local councils, businesses, community groups, and Londoners themselves will need to take action.

One of the core principles of this strategy is that the organisations the Mayor directly controls and has oversight of should lead by example.

These organisations are known as the GLA group and their responsibilities include transport, policing and emergency response. The GLA group will tackle environmental challenges and spend its money responsibly – doing things the right way and setting examples for others.

Protecting and enhancing the environment will also require a joined-up approach across a range of different policy areas. This strategy has important links to many of the Mayor's other strategies, which will be consulted upon over the course of the coming months.

The Mayor wants to hear what everyone who has a stake in London thinks about the proposals outlined in this strategy. To have your say on the ideas and proposals in this strategy please visit www.london.gov.uk/environment-strategy.

The Mayor also wants to help everyone get involved in improving London's environment. To find out more visit www. london.gov.uk/what-we-do/environment or for volunteering opportunities visit https://volunteerteam.london.gov.uk/

