

29 August 2023

ULEZ expansion is an important step on the path to phasing out diesel in London

ULEZ expansion targets the final group of diesel vehicles in the last part of London to achieve the Euro 6 emission standard and the comparable Euro 4 emission standard for petrol

Eight previous phases of Low Emission Zones, the T-Charge and Ultra Low Emission Zones have played a crucial part in reducing diesel in London over more than 15 years. This period has included the World Health Organisation (“WHO”) classifying diesel engine exhaust as carcinogenic to humans in June 2012 and ‘Dieselgate’ in September 2015

These steps have sharply reduced concentrations of nitrogen dioxide, a toxic gas, at roadsides to comply nearly with the WHO’s 2006 air quality guidelines and show how the new guidelines can be met by 2030

Candidates for Mayor of London in 2024 must encourage people to stop buying diesel vehicles by setting a target for London to be ‘diesel-free’ by 2030 with limited exemptions

Air pollution is one of the world’s greatest environmental health risks and causes an estimated seven million premature deaths every year¹. The World Health Organisation (“WHO”) also names it as the second leading cause of deaths from non-communicable diseases after tobacco smoking².

The atmosphere comprises local air pollution and greenhouse gases. The former can be divided into particles – which are regulated for health and legal purposes by their diameter (e.g. “PM_{2.5}” and “PM₁₀”) – and gases. Nitrogen dioxide (“NO₂”), a toxic gas, is an important molecule for these purposes within the cloud of gases. It is also reacts with sunlight to form ozone, the most irritant gas known.

Vehicles are typically the largest source of NO₂ at busy roadsides where the most vulnerable and economically deprived people often live. These roads are also the places where many people work, shop or travel including by public transport, walking or cycling. Other sources of NO₂ include gas heating and cooking.

Low Emission Zones

NO₂ from diesel vehicles was identified as a problem over 30 years ago. Powerful laws were put in place by 1999 to be achieved across Europe by 1 January 2010 with the possibility of time extensions of up to five years subject to strict conditions. ClientEarth successfully enforced these laws in the Supreme Court on 29 April 2015. Earlier deadlines addressed PM₁₀.

By July 2014 a leading scientist explained that many roads in Central London would tend to have the highest NO₂ concentrations in the world. Diesel vehicles were cited as a particular problem.

Measures to tackle traffic problems include two overlapping circles with one focused on congestion and the other focused on emissions. Each measure can have secondary benefits for the other. Low Emission

¹ [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)

² <https://www.who.int/teams/environment-climate-change-and-health/air-quality-and-health/policy-progress>

Zones (“LEZs”), Toxicity Charges (“T-Charges”) and Ultra Low Emission Zones (“ULEZ”) target exhaust emissions. While these measures have successfully used technology to reduce harmful emissions at their source, they are also ‘blunt’ measures which could be replaced in due course by Emissions Based Road Charging (“EBRC”) which would charge people depending on the time and place they drive and the quality and quantity of fuel they burn. EBRC could pay people to walk and cycle. The technology exists to implement it and address privacy concerns.

Mayor Livingstone introduced the first LEZ for larger vehicles London-wide on 4 February 2008. It was extended to more vehicles on 7 July 2008 and tightened for two groups of vehicles on 3 January 2012. A fifth phase was implemented on 1 March 2021.

The WHO classified diesel engine exhaust as carcinogenic to humans on 12 June 2012, based on sufficient evidence that exposure is associated with an increased risk for lung cancer³.

Ultra Low Emission Zones

On 26 March 2015, Mayor Johnson confirmed his plan for a ULEZ covering Central London from September 2020 that would require Euro 6 for diesel vehicles and Euro 4 for petrol vehicles or a daily charge of £12.50.

Air pollution was a top issue in the 2016 Mayoral election. Sadiq Khan was elected with a manifesto commitment to “*restore London’s air quality to legal and safe levels...*”. This led him to bring forward the date of the ULEZ to 8 April 2019 and announce a T-Charge, based on Euro 4 emission standards, for the same area from 23 October 2017 that would operate until the tighter ULEZ entered into force on 8 April 2019.

Mayor Khan was re-elected as Mayor on 6 May 2021 with a promise to expand the ULEZ to cover Inner London from 25 October 2021 and take “*...even more world-leading action on tackling air pollution*”.

On 22 September 2021, the WHO published new air quality guidelines which halved the guideline for PM_{2.5} to 5 micrograms per cubic metre (µg/m³) and slashed the equivalent for NO₂ from 40 µg/m³ to 10 µg/m³ with an interim target of 20 µg/m³. The new guidelines were informed by a series of systematic reviews investigating associations between a range of air pollutants and human health outcomes over many years⁴.

These new guidelines will inevitably have contributed, alongside other factors, to Mayor Khan’s decision to consult between 20 May 2022 and 29 July 2022 on proposals to expand the ULEZ to Outer London and confirm his decision on 25 November 2022 to proceed on 29 August 2023.

Reducing exhaust emissions to protect public health

Emission measures typically target one or more pollutants from one or more sources in one or more places over one or more time periods. Their impact may occur over many months e.g. due to pre-compliance, decisions and lead-times to purchase new or second-hand vehicles, the timing of scrappage or retrofitting schemes or possible periods of ‘soft’ enforcement.

³ https://www.iarc.who.int/wp-content/uploads/2018/07/pr213_E.pdf

⁴ <https://www.sciencedirect.com/journal/environment-international/special-issue/10MTC4W8FXJ>

Jacobs' Integrated Impact Assessment (dated 17 May 2022) for Transport for London ("TfL") estimated that ULEZ expansion would reduce road traffic NO_x emissions from cars and motorcycles (which are the subject of ULEZ expansion) by between 7.3% and 11.4% in boroughs new to the scheme in Outer London by the end of 2023 (Appendix D, Table 9-1). The same report showed the number of people exposed to concentrations of NO₂ exceeding the WHO's interim target (of 20 µg/m³) being reduced by between 4.5% and 14.4% in most boroughs new to the scheme in Outer London by the end of 2023 (Appendix D, Table 9-6) i.e. 342,700 people. NO₂ concentrations fall sharply away from roadsides.

The consultation document for ULEZ expansion (dated May 2022) estimated that with a London-wide ULEZ in place, 145 (of 2,369) schools (mostly in outer London), 30 (of 335) care homes and 13 hospitals (of 228) are expected to meet the WHO's interim target of 20 µg/m³ for NO₂ by the end of 2023 (pages 72 to 74).

The ULEZ has been highly successful at reducing emissions of NO₂ concentrations in Central and Inner London. The Mayor of London's first year report on the Inner London expansion estimated that it reduced NO₂ at roadsides in these areas by over 40% and 20% respectively. The ULEZ was also shown to have reduced PM_{2.5} and carbon dioxide emissions. Other and related measures, such as the increasing electrification of the bus and taxi fleets in London, have contributed to further reductions of NO₂ and other pollutants.

Low emission zones have been shown to reduce hospitalisations, heart attacks and strokes⁵. A separate study by the UK Health Security Agency ("UKHSA"), formerly Public Health England, has estimated 1,140,018 new cases of disease attributable to nitrogen dioxide between 2017 and 2035 equivalent to 1,933 new cases of disease per 100,000 population.

Next steps

After a landmark High Court decision on 28 July 2023, the ULEZ will expand to Outer London on 29 August 2023. This means that up to 10% of cars seen driving in Outer London on an average day will need to pay a daily charge of £12.50.

Quotes

Simon Birkett, Founder and Director of Clean Air in London, commented:

"The case for improving London's air quality is clear. Air pollution is one of the world's greatest environmental health risks causing an estimated seven million premature deaths every year. The World Health Organisation also names it as the second leading cause of deaths from non-communicable diseases after tobacco smoking.

"This isn't the end of the story. ULEZ expansion represents an important step on the path to phasing out diesel in London and showing how the WHO's new air quality guidelines can be met by 2030. We're witnessing the evolution of a policy that has shown its worth across eight successive schemes to reduce diesel exhaust emissions and protect public health. As a next step, candidates for the Mayor of London in 2024 must encourage people to stop buying diesel vehicles by setting a target for London to be 'diesel-free' by 2030 with limited exceptions.

⁵ [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(23\)00120-2/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(23)00120-2/fulltext)

“We know that low emission zones work. The Mayor of London has shown that two earlier phases of the ULEZ in Central London and Inner London have dramatically reduced NO₂ concentrations along roadsides by over 40% and 20% respectively. These roadsides are where the most vulnerable and economically deprived people often live and many others work, visit or travel from time to time. Significantly, the number of diesel cars first registered in London has fallen by over 90% since the peak in 2015 and 2016 to 5,386 in 2022.

“The greatest lesson from the Great Smog, more than 70 years ago, is that big problems need big solutions. ULEZ expansion will create the biggest, strongest ultra low emission zone in the world and make London a world leader in cleaner air again.

“Megacities need a mixture of political leadership, technology and ‘lifestyle measures’ to tackle their biggest problems such as air pollution and climate change. Of these, ‘lifestyle measures’ range from bans, charges and campaigns to build public understanding of air pollution to incentives and adoption. They also encourage walking, cycling and the use of public transport.

“The latest phase of the ULEZ targets the final group of diesel vehicles in the last part of London to achieve the Euro 6 engine emission standard and the comparable Euro 4 standard for petrol vehicles. These standards aim to reduce exhaust emissions of oxides of nitrogen to reduce concentrations of nitrogen dioxide at roadsides and make the air more breathable, especially for those living in congested areas.

“While diesel is a particularly serious problem in Europe, that requires large strong ultra low emission zones, ULEZ expansion in London has valuable lessons for other cities around the world.”

ENDS

Clean Air in London

Clean Air in London’s mission is to achieve full compliance, urgently and sustainably, with the World Health Organisation’s air quality guidelines throughout London and elsewhere⁶. It was founded in 2006.

APPENDIX

1. Timeline

- 31 January 2006 [Consultation begins on Low Emission Zone “\(LEZ\)”](#)
- 13 November 2006 [Consultation begins on detailed proposals for London-wide LEZ \(until 2 February 2007\)](#)
- 4 June 2007 [Countdown to London-wide LEZ begins](#)
- 4 February 2008 [LEZ commences London-wide](#)
- 7 July 2008 [LEZ phase 2 commences](#)

⁶ <https://cleanair.london/>

- 3 February 2009 [Mayor Johnson suspends third phase of LEZ due to affect vans and minibuses from October 2010](#)
- 3 January 2012 [LEZ phases 3 and 4 commence](#)
- 12 June 2012 [International Agency for Research on Cancer classified diesel engine exhaust as carcinogenic to humans](#)
- 9 July 2014 [Leading scientist says there are reasons to believe many roads in central London will tend to have the highest NO₂ concentrations of anywhere](#)
- 26 March 2015 [Mayor Johnson announces world's first Ultra Low Emission Zone \("ULEZ"\) for September 2020 i.e. Central London \(136,000 residents\) \(21 square kilometres\)](#)
- 29 April 2015 [Supreme Court orders Government to submit a new air quality plan for nitrogen dioxide by no later than 31 December 2015](#)
- September 2015 [Dieselgate emissions scandal begins](#)
- 5 May 2016 London Mayoral election
- 17 February 2017 [Mayor Khan confirms Emissions Charge \("T-Charge"\) in Central London from 23 October 2017](#)
- 23 October 2017 [T-Charge commences in Central London](#)
- 3 November 2017 [Mayor Khan confirms ULEZ will start earlier on 8 April 2019](#)
- 8 June 2018 [Mayor Khan confirms ULEZ extension to north/south circular from 25 October 2021 i.e. Inner London \(123 square miles \(319 square kilometres\)\) \(3,404,300 people\) \(2021 census\). ULEZ covers 380 square kilometres.](#)
- 8 April 2019 [ULEZ starts in Central London \(24/7/365\)](#)
- 1 March 2021 [Low Emission Zone tightened to require all larger commercial vehicles to meet the Euro VI emission standard](#)
<https://tfl.gov.uk/info-for/media/press-releases/2021/march/tfl-s-pioneering-direct-vision-standard-comes-into-force>
- 6 May 2021 London Mayoral election
- 25 October 2021 [ULEZ expands to north-south circular. New zone covers 380 square kilometres \(i.e. 18 times the size of Central London zone\) and covers 3.8 million people](#)
- 25 November 2022 [Mayor Khan announces ULEZ expansion London-wide from 29 August 2023](#)
- 28 July 2023 [Landmark High Court judgment dismisses legal challenge](#)

29 August 2023 ULEZ will extend to Outer London (484 square miles (1,253 square kilometres) (5,395,000 people) (2021 census)

2 May 2024 London Mayoral election

Other Mayoral press releases

<https://tfl.gov.uk/info-for/media/press-releases>

<https://www.london.gov.uk/media-centre/mayors-press-releases>

2. Guide to vehicle emission and congestion measures – Check TfL website for latest information

ULEZ (24/7/364 days)

First registered

Euro 3 (NOx) motorcycles, mopeds etc	Widely available since 2007
Euro 4 (NOx) petrol cars, vans and (some) minibuses	Widely available since 2006
Euro 6 (NOx and PM) diesel cars, vans and minibuses	Widely available since 2016

LEZ (24/7/365 days)

Euro VI (NOx and PM) diesel HGVs, vans etc (>3.5 tonnes)	January 2014
Euro VI (NOx and PM) diesel buses, minibuses and coaches (>5 tonnes)	January 2014

Congestion charge (except Christmas Day to New Year's Day bank holiday inclusive)

Operates 07:00 to 18:00 Monday to Friday

Operates 12:00 to 18:00 Saturday, Sunday and Bank Holidays

3. ULEZ resources

[TfL – ULEZ consultation documents and reports](#)

https://cleanair.london.gov.uk/uploads/CAL-526-ULEZ-consultation-document_May-2022.pdf

[ULEZ – Year One report \(18 February 2023\)](#)

<https://www.london.gov.uk/programmes-strategies/environment-and-climate-change/environment-and-climate-change-publications/inner-london-ultra-low-emission-zone-expansion-one-year-report>

<https://www.london.gov.uk/new-report-reveals-transformational-impact-expanded-ultra-low-emission-zone-so-far>

[Scrappage scheme](#). NB: Eligibility expanded on 21 August 2023

[Mayor announces extension of scrappage scheme from 21 August 2023 \(on 4 August 2023\)](#)

4. TfL consultations

<https://haveyoursay.tfl.gov.uk/cleanair>

[London-wide ULEZ Integrated Impact Assessment](#) (17 May 2022)

Estimated changes in NO_x emissions in London boroughs (Table 9-1, pages 155 and 156, Appendix d) (cars and motorcycles)

Population exceeding WHO air quality target for annual mean NO₂ concentration 20 µg/m³ in London boroughs (Table 9-6, pages 167-170, Appendix D)

[Evening Standard: Poll shows clear support for expanding ULEZ](#) (11 October 2022)

5. [London Atmospheric Emissions Inventory 2019](#)

https://cleanair.london/app/uploads/CAL-526-LAEI-2019-Summary-Note_April-2023.pdf

LAEI Summary Note (24 April 2023): Figures 7 and 8 highlight the importance of exceedances along roadsides (pages 15 and 16)

LAQN: Oxford Street – highest NO₂ concentrations in the world? (9 July 2014)

“...there are reasons to believe many roads in central London will tend to have the highest NO₂ concentrations of anywhere.”

<https://www.londonair.org.uk/london/asp/news.asp?NewsId=OxfordStHighNO2&StartIndex=31>

[Guardian \(18 July 2023\): Mayor Johnson: ‘\[expletive\]’ to say Oxford Street has world’s worst pollution](#)

6. Clean Air Zones

<https://www.gov.uk/guidance/driving-in-a-clean-air-zone>

7. Health

World Health Organisation announced new air quality guidelines on 22 September 2021

<https://cleanair.london/hot-topics/new-who-air-quality-guidelines/>

Nitrogen dioxide (NO₂):

Annual mean guideline: 10 µg/m³

Interim target: 20 µg/m³

Daily mean guideline: 25 µg/m³ (3-4 exceedances per year)

NO₂ is a reddish-brown gas and a strong oxidant. It is also an important ozone precursor. Ozone is the most irritant gas known

Short-term exposure can cause inflammation of the airways and increase susceptibility to respiratory infections and allergens. It can also exacerbate the symptoms of those already suffering from lung and heart conditions.

https://www.who.int/health-topics/air-pollution - tab=tab_1

[WHO fact sheet about ambient \(outdoor\) air pollution](#) (19 December 2022)

Worldwide ambient air pollution in 2019 accounted for:

- 43% of deaths and disease from chronic obstructive pulmonary disease
- 25% of deaths and disease from ischaemic heart disease
- 24% of deaths from stroke
- 17% of deaths and disease from acute lower respiratory infection
- 29% of deaths and disease from lung cancer

<https://www.who.int/teams/environment-climate-change-and-health/air-quality-and-health/health-impacts/exposure-air-pollution>

<https://www.who.int/teams/environment-climate-change-and-health/air-quality-and-health/health-impacts>

<https://www.who.int/teams/environment-climate-change-and-health/air-quality-and-health/health-impacts/types-of-pollutants>

[Update of the WHO Air Quality Guidelines: Systematic Reviews](#) (1 October 2022)

Non-communicable diseases

“Air pollution is the second leading cause of deaths from non-communicable diseases (“NCDs”) after tobacco smoking.”

“The WHO recognises household and ambient air pollution as one of five key risk factors for NCDs, along with unhealthy diets, tobacco-smoking, harmful use of alcohol and physical inactivity.”

<https://www.who.int/teams/environment-climate-change-and-health/air-quality-and-health/policy-progress>

<https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>

https://www.who.int/health-topics/noncommunicable-diseases-tab=tab_1

[UNECE: Air pollution and health](#)

[European Environment Agency: Air pollution and health](#)

[Inquest touching on the tragic death of Ella Roberta Adoo Kissi-Debrah](#) (16 December 2020)

[Chief Medical Officer’s annual report on Air Pollution](#) (8 December 2022) (page ii)

“Some individuals such as those with pre-existing respiratory or cardiovascular disease are particularly susceptible, but the effects of air pollution can be seen across the population. The mortality burden of air pollution in England is estimated to be between 26,000 and 38,000 a year, but in addition many people suffer avoidable chronic ill health as a result of it. Improvements in air quality have been associated with improved health outcomes – for example, reductions in air pollution in London have led to reduced childhood asthma hospital admissions. Further reductions

in air pollution will lead to significant reductions in coronary heart disease, stroke and lung cancer, among others.”

[COMEAP statement on quantifying mortality associated with long-term exposure to PM_{2.5}](#) (16 March 2022) (which recommended increasing the CRF from 6% to 8% per 10µg/m³)

COMEAP report on the link between long-term average concentrations of nitrogen dioxide and mortality (22 August 2018)

<https://www.gov.uk/government/publications/nitrogen-dioxide-effects-on-mortality>

[21 December 2010 \(paragraphs 18 and 21 on page 5\)](#)

“As a central estimate we conclude that anthropogenic PM_{2.5} at 2008 levels (8.97 µg/m³ in the UK) is associated with an effect on mortality equivalent to nearly 29,000 deaths at typical ages of death in 2008 in the UK...”

“It is not known how this population-wide burden is spread across individuals in the population, but we can speculate between various possibilities. Our results are consistent with an average loss of life ranging at one extreme from 11½ years if air pollution was solely responsible for 29,000 deaths to, at the other extreme, six months if the timing of all deaths was influenced by air pollution. We believe both of these extremes to be extremely unlikely. Given that much of the impact of air pollution on mortality is linked with cardiovascular deaths, it is more reasonable to consider that air pollution may have made some contribution to the earlier deaths of up to 200,000 people in 2008, with an average loss of life of about two years per death affected, though that actual amount would vary between individuals. However, this assumption remains speculative.”

[Six Cities Study](#) – 9 December 1993

[IARC](#) – 12 June 2012

[Public Health England: Health matters: air pollution](#) – 14 November 2018

[Imperial College London](#) (25 January 2021) – Between 3,600 and 4,100 attributable deaths in 2019 (anthropogenic PM_{2.5} and NO₂) (Table 3, page 16). Note: 2,955 attributable deaths for anthropogenic PM_{2.5} alone (Table 5, page 20) and 2,999 attributable deaths for NO₂ (Table 6, page 21)

“In 2019, in Greater London, the equivalent of between 3,600 to 4,100 deaths (61,800 to 70,200 life years lost) were estimated to be attributable to human-made PM_{2.5} and NO₂, considering that health effects exist even at very low levels. This calculation is for deaths from all causes including respiratory, lung cancer and cardiovascular deaths.” (Key findings, page 3).

<https://www.london.gov.uk/programmes-strategies/environment-and-climate-change/environment-and-climate-change-publications/inner-london-ultra-low-emission-zone-expansion-one-year-report>

<https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/environment-publications/health-burden-air-pollution-london>

Other studies or reports by Imperial College London

https://www.london.gov.uk/sites/default/files/hia_asthma_air_pollution_in_london.pdf

[https://www.london.gov.uk/sites/default/files/2023-04/Imperial College London Projects - impacts of air pollution across the life course – evidence highlight note.pdf](https://www.london.gov.uk/sites/default/files/2023-04/Imperial%20College%20London%20Projects%20-%20impacts%20of%20air%20pollution%20across%20the%20life%20course%20-%20evidence%20highlight%20note.pdf)

<https://www.imperial.ac.uk/news/231894/london-pollution-improved-with-evidence-small/>

<https://iopscience.iop.org/article/10.1088/1748-9326/ac30c1>

[UK Health Security Agency](#) (June 2022) (29,000 to 43,000 attributable deaths in the UK in 2019) (Table 4, pages 15 to 21)

“An estimate of the mortality burden attributable to long-term exposure to air pollution is useful in communications about the public health significance of air pollution.

The Committee on the Medical Effects of Air Pollutants (COMEAP) recently updated its recommendation for quantification of mortality associated with long-term exposure to fine particle air pollution (PM_{2.5}). The recommended concentration-response function (CRF) is 1.08 (95% CI: 1.06, 1.09) per 10µg/m³ annual average PM_{2.5}. The use of a cut-off value is not recommended when quantifying the mortality burden and thus quantification can be carried out down to very low PM_{2.5} concentrations by assuming a log-linear shape for the CRF.

We applied the method developed by COMEAP to estimate the mortality burden associated with long-term exposure to air pollution using the updated CRF. Using this approach, the mortality burden associated with exposure to the air pollution was estimated for the UK and separately for the 4 constituent nations. The new estimates suggest that the burden of long-term exposure to air pollution in 2019 in the UK was an effect equivalent to 29,000 to 43,000 deaths for adults aged 30 and over.”

“In the UK, using single-pollutant models for NO₂ or PM_{2.5} as indicators of the air pollution gave estimates of 19,000 and 40,000 respectively; the 2 estimates should not be added together, but the higher of these should be used, as this is likely to underestimate the burden the least. By using the pairs of adjusted coefficients from the 4 different studies, the values range from 29,000 to 43,000. This encompasses the estimate based on the use of the single pollutant model for PM_{2.5} and represents the burden of long-term exposure to air pollution.”

Note: England – 26,000 to 38,000 attributable deaths

[Public Health Indicators](#)

6.5% in London in 2021.

[LEZs health benefits \(July 2023\)](#)

“Available evidence suggests observable health benefits from schemes restricting private vehicles in cities. Evidence for LEZs is most consistent for cardiovascular disease, whereas evidence for CCZs is restricted to RTIs [road traffic injuries] in London. Further research could usefully investigate how to optimise the design of such schemes to improve health.”

Useful Parliamentary Questions

[PQ UIN185745 \(18 May 2023\)](#) re new cases of disease for NO₂ and PM_{2.5} between 2017 and 2035

[PQ UIN 181819 \(19 April 2019\)](#) re emissions become concentrations

[PQ UIN 181810 \(19 April 2023\)](#) re classifications of deaths

[https://cleanair.london/app/uploads/CAIC-app_One-death-recorded PQ181810 181816 181822 240423.pdf](https://cleanair.london/app/uploads/CAIC-app_One-death-recorded_PQ181810_181816_181822_240423.pdf)

[PQ UIN 185732 \(18 May 2023\)](#) re total PM_{2.5}

[PQ UIN 185872 \(19 May 2023\)](#) re 48,592 deaths in London in 2022 (aged 30 and above) (excluding COVID-19) (2019: 47,878; 2020: 48,623; and 2021: 46,265)

[PQ UIN 183299 \(2 May 2023\)](#) re 12,937 deaths by cardiovascular causes in London in 2021 (2019: 12,612; and 2020: 12,838)

29 August 2023 is the 241st day of the year.

8. Population weighted total PM_{2.5} was 8.6987 µg/m³ in London in 2021

<https://uk-air.defra.gov.uk/data/pcm-data>

9. High Court judgment – 28 July 2023

Bexley, Bromley, Harrow, Hillingdon and Surrey vs Mayor of London

[“The Councils’ challenge fails on all three grounds and is dismissed.”](#)

10. Nitrogen dioxide levels (calendar year 2022) – Site type (roadside, background etc). E&OE

Notes:

- 1. Full year data takes account of seasonal changes e.g. winter heating emissions*
- 2. WHO interim level and expected new European Union legal limit for NO₂ is 20 µg/m³*

[Barking and Dagenham, Scrattons Farm \(Suburban\)](#). 2022: 21 µg/m³

[Barnet, Tally Ho \(Urban traffic\)](#). 2022: 29 µg/m³

[Bexley, Slade Green \(Suburban\)](#). 2022: 18 µg/m³

[Brent Park Ikea, Drury Way \(Roadside\)](#). 2022: 43 µg/m³

[Bromley, Harwood Avenue \(Roadside\)](#). 2022: 20 µg/m³

[Croydon, Norbury \(Kerbside\)](#). 2022: 37 µg/m³

[Ealing, Alec Reed Academy \(sensor\) \(Urban traffic\)](#). Only 2023 YTD available (22/8/23): 33 $\mu\text{g}/\text{m}^3$

[Enfield, Bush Hill Park \(Suburban\)](#). 2022: 19 $\mu\text{g}/\text{m}^3$

[Greenwich, Fiveways Sidcup Road A20 \(Roadside\)](#). 2022: 27 $\mu\text{g}/\text{m}^3$

[Havering, Romford \(Roadside\)](#). 2022: 30 $\mu\text{g}/\text{m}^3$

[Harrow, Stanmore \(Urban background\)](#). Latest FY data 2021: 16 $\mu\text{g}/\text{m}^3$. 2023 YTD: 12 $\mu\text{g}/\text{m}^3$

[Hillingdon, Keats Way \(Suburban\)](#). 2022: 27 $\mu\text{g}/\text{m}^3$

[Kingston upon Thames, Cromwell Road \(Roadside\)](#). 2022: 43 $\mu\text{g}/\text{m}^3$

[Merton, Morden Civic Centre 2 \(Roadside\)](#). Last FY data 2019: 51 $\mu\text{g}/\text{m}^3$. 2023 YTD: 30 $\mu\text{g}/\text{m}^3$

[Sutton, Wallington \(Kerbside\)](#). 2022: 44 $\mu\text{g}/\text{m}^3$

[Tower Hamlets \(Roadside\)](#). 2022: 24 $\mu\text{g}/\text{m}^3$

[Waltham Forest, Crooked Billet \(Urban traffic\)](#). 2022: 40 $\mu\text{g}/\text{m}^3$

Other sites

[Brixton Road, Lambeth \(Kerbside\)](#). 2022: 64 $\mu\text{g}/\text{m}^3$

[Wandsworth, Putney High Street \(Kerbside\)](#). Last FY data 2021: 62 $\mu\text{g}/\text{m}^3$. 2023 YTD: 32 $\mu\text{g}/\text{m}^3$

11. Clean Air in London research

[‘Blame Maggie Thatcher and every Prime Minister since for diesel’](#)

[‘Emissions Based Road Charging’](#)

[Ultra Low Emission Zones](#)

<https://cleanair.london/hot-topics/tcharge-is-an-important-step-on-the-path-to-banning-carcinogenic-diesel-fumes/>

<https://cleanair.london/olympics/low-emission-zone-is-much-needed-but-must-go-much-further-much-faster/>

12. Failure of diesel standards

[Limited impact of diesel particle filters on road traffic emissions of ultrafine particles](#) (April 2023)

<https://www.transportenvironment.org/discover/robust-euro-7-emissions-standards-will-deliver-better-air-quality-in-european-cities/>

<https://www.transportenvironment.org/discover/diesel-true-dirty-story/>

https://www.transportenvironment.org/wp-content/uploads/2021/07/2018_09_TE_Dieselgate_report_final.pdf

<https://www.transportenvironment.org/discover/dirty-30-diesel-cars-mostly-approved-carmakers-home-countries-report/>

[Clean Air Fund – End of programme report FINAL \(January 2013\)](#) (Table 2: Comparison of Clean Air Measures e.g. diesel particle filters versus green infrastructure)

<https://cleanair.london/olympics/mayor-used-pollution-suppressor-to-save-himself-not-others/>

13. Diesel cars first registered in London (i.e. in a city of nine million people)

	Cars	Vans
2011	49,875	
2012	55,012	
2013	59,122	
2014	67,107	
2015	68,681	15,325
2016	68,841	14,643
2017	56,282	14,446
2018		13,534
2019		13,321
2020		8,708
2021	7,595	11,706
2022	5,386	6,787

<https://www.smmmt.co.uk/vehicle-data/car-registrations/>

[PQ UIN 139131](#) (3 February 2023)
Cars first registered in 2017 and 2021

[PQ UIN 183302](#) (2 May 2023)
Cars first registered in 2016 and 2022 (9 months)

[PQ UIN 185865](#) (19 May 2023)
Cars first registered in 2011, 2012, 2013, 2014 and 2015

[What Do They Know](#) (13 July 2023)

[Cars first registered in 2022](#)

Mayoral Questions (23 March and 18 May 2023)

<https://www.london.gov.uk/who-we-are/what-london-assembly-does/questions-mayor/find-an-answer/car-ownership-london>

<https://www.london.gov.uk/who-we-are/what-london-assembly-does/questions-mayor/find-an-answer/ulez-expansion-update>

14. Urban access regulations in other cities

<https://urbanaccessregulations.eu/>

<https://www.transportenvironment.org/discover/quantifying-the-impact-of-low-and-zero-emission-zones-in-six-european-cities/>

https://londonair.org.uk/london/asp/LAQNSeminar/pdf/september2010/Berlin_LEZ_impacts_analysis.pdf

15. Ella's Law – Clean Air (Human Rights) Bill

<https://cleanair.london/ellaslaw/>

<https://bills.parliament.uk/bills/3161>

<https://cleanair.london/app/uploads/CAL-455-UNGA-R2HE-resolution-adopted-280722.pdf>

European Commission proposals (26 October 2022): [Press release](#) and [Annex](#)

16. Sadiq Khan, Mayoral manifesto commitments

May 2016 – My priorities (page 8)

“Restore London’s air quality to legal and safe levels...”

May 2021

“I promise even more world-leading action on tackling air pollution.”

“I’ll expand the ULEZ in October 2021...”

“Beyond expansion of the ULEZ, I’ll monitor all existing road-charging schemes to ensure they bring the maximum benefits of improved air quality and reduced congestion, and I’ll identify where further action is needed to eradicate hotspots for air pollution.”

17. Conservative Party manifesto commitments (2019)

“We will support clean transport to ensure clean air, as well as setting strict new laws on air quality.”

18. Great Smog (5-9 December 1952)

<https://cleanair.london/health/great-smog/>

19. Environmental Audit Committee inquiry (launched on 10 May 2023)

The Environmental Audit Committee has an ongoing inquiry into outdoor and indoor air quality targets.

<https://committees.parliament.uk/work/7686/outdoor-and-indoor-air-quality-targets/>

20. Other

<https://www.healtheffects.org/>

https://cleanair.london/app/uploads/City-of-London_VP_Act-1954-2.pdf