London parent groups warn diesel buses choking young children

Environmental Defense Fund Europe methodology

Finding: Harmful NO_x pollution from TfL diesel buses is on average 62% higher in London's most deprived areas than the least.

> The Government's [Index of Multiple Deprivation](#) (IMD) data was used to determine the deprivation score for every Lower Layer Super Output Area ([LSOA](#)) in London[1]; an LSOA is the smallest census geography of public statistics made available. These scores were used to allocate each LSOA into one of ten equal groups, or deciles, such that decile 1 includes the most deprived 10% of LSOAs and decile 10 includes the least deprived 10% of LSOAs.
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> High resolution source apportionment modelling data produced by Cambridge Environmental Research Consultants (CERC) using the ADMS-Urban model as part of the Breathe London pilot project[2], based on the London Atmospheric Emissions Inventory 2013 dataset[3], estimates the concentration of NO_x produced by Transport for London (TfL) buses at a 10m grid resolution across Greater London. The average concentration of NO_x from TfL buses for areas of each deprivation decile was determined by summing the concentration at each grid cell within all the areas of a particular IMD decile and dividing that total by the count of all grid cells within the same area.
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> The average NO_x concentration of 1.57 µg/m^3 in decile 1 areas is 62% higher than the average concentration of 0.97 µg/m^3 in decile 10 areas.

Finding: Only 3% of London's bus routes are currently electric or hydrogen, with TfL aiming to reach 7% by 2022.

> Data from TfL describes a total of 781 bus routes in London (not including river boat routes)[4]. Data from a recent Freedom of Information Act response from TfL lists a total of 26 bus routes which are currently fully electric, which represents 3% of all bus routes[5].

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[1] https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019

[2] See Appendix 6 of the Breathe London technical report: https://www.globalcleanair.org/files/2021/02/BL-CERC-Final-Report.pdf

[3] https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013

[4] https://tfl.gov.uk/info-for/open-data-users/our-open-data#on-this-page-3

[5] https://tfl.gov.uk/corporate/transparency/freedom-of-information/foi-request-detail?referenceId=FOI-2431-2021

Finding: New air quality modelling and analysis at select kerbside locations outside central London, produced by CERC using the ADMS-Urban model as part of the Breathe London pilot project, shows a zero-emission bus fleet in London could reduce levels of the toxic gas nitrogen dioxide (NO_2) by up to 13%.

> Please see the Breathe London technical report[6], specifically: Appendix 6: Final Modelling Report[7].

Finding: St Joseph's Catholic Primary School, close to Kingston town centre where families shop, TfL buses account for up to 24% of NO_x pollution from road transport.

> The high-resolution source apportionment modelling data produced by CERC using the ADMS-Urban model as part of the Breathe London pilot project, based on LAEI 2013, estimates the concentration of NO_x produced by different road transport sources at a 10m grid resolution across Greater London. At the grid cell closest to the entrance to St Joseph's Catholic Primary School, the NO_x concentration from TfL buses is 12.4 µg/m^3, which is 24% of the 52.5 µg/m^3 from all modelled road transport sources combined. Road transport sources include the following: Articulated HGVs, Diesel Cars, Diesel LGVs, Motorcycles, NonTfL Buses and Coaches, Petrol Cars, Petrol LGVs, Rigid HGVs, Taxis, and TfL Buses.

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[6] https://www.globalcleanair.org/files/2021/02/BL-Pilot-Final-Technical-Report.pdf
[7] https://www.globalcleanair.org/files/2021/02/BL-CERC-Final-Report.pdf