

Science for Environment Policy

Five years on: changes to vehicle fleets and air quality in London's low emission zone

Low emission zones (LEZs), which restrict access for high emission vehicles, have proven to be a successful way to improve air quality in line with EU regulations. An analysis of London's LEZ has revealed discernible reductions in air pollution levels five years after implementation.

London's LEZ, created in February 2008, requires [vehicles](#) weighing more than 12 tonnes to meet 'Euro III' [emissions](#) standards. In July 2008, this was extended to freight vehicles with a weight of more than three and a half tonnes, as well as buses and coaches over five tonnes. By 2012, large vans and minibuses were also required to be compliant with these restrictions. One of the aims of the scheme was to create an incentive for organisations to replace existing vehicles with newer and less polluting models by introducing fines for non-compliance (£100 per day for large vans and £200 for heavy vehicles).

Data from the UK's Driver and Vehicle Licensing Agency showed that the number of rigid vehicles (medium or heavy duty lorries without a trailer) not meeting EU emission standards dropped substantially in 2008, suggesting that the LEZ resulted in an extra 20% of vehicles being replaced by lower-emission vehicles. Articulated lorries showed a similar trend. In January 2012, minimum standards were introduced for light commercial vehicles (LCV), such as vans. LEZ restrictions on vans with a weight of more than 1.3 tonnes had significant impact, since this includes more than 60% of all freight-carrying vehicles. There is early evidence that LCVs are also being replaced in the same way as the larger rigid and articulated vehicles.

The results show that the LEZ is driving a reduction in 'non-compliant' vehicles, i.e. those that do not meet the stricter EU emission standards; the number of articulated vehicles non-compliant with EU emissions regulations has halved since 2007, and the proportion of non-compliant rigid vehicles used in the LEZ dropped by 6% to 22% in 2009. The data also show a shift in the types of vehicles used in the LEZ with LCVs and articulated vehicles being used instead of large rigid vehicles. The study authors note that the large area covered by the LEZ includes industrial areas near motorways, meaning that vehicles moving goods to other parts of the UK are also subject to restrictions.

From 2001, data on levels of particulate matter and nitrogen oxides, both produced by traffic, were recorded at four locations, three within the LEZ and one 25 km away. Particulate matter concentrations were found to be stable or decreasing at the three sites within the LEZ, after introduction of the scheme.

Nitrogen oxide concentrations fell both inside and outside the LEZ and were not significantly different between locations. Overall, the authors conclude that the LEZ has had a substantial impact in the composition of the vehicle fleet, increasing the proportion of low-emission vehicles. This in turn has led to a small but significant improvement in air quality.



25 July 2013

Issue 338

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Source: C Ellison, R.B., Greaves, S.P. & Hensher, D.A. (2013). Five Years of London's low emission Zone: Effects on vehicle fleet composition and air quality. *Transportation Research Part D* 23: 25-33. DOI: 10.1016/j.trd.2013.03.010

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To cite this article/service: "[Science for Environment Policy](#)": European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol.