

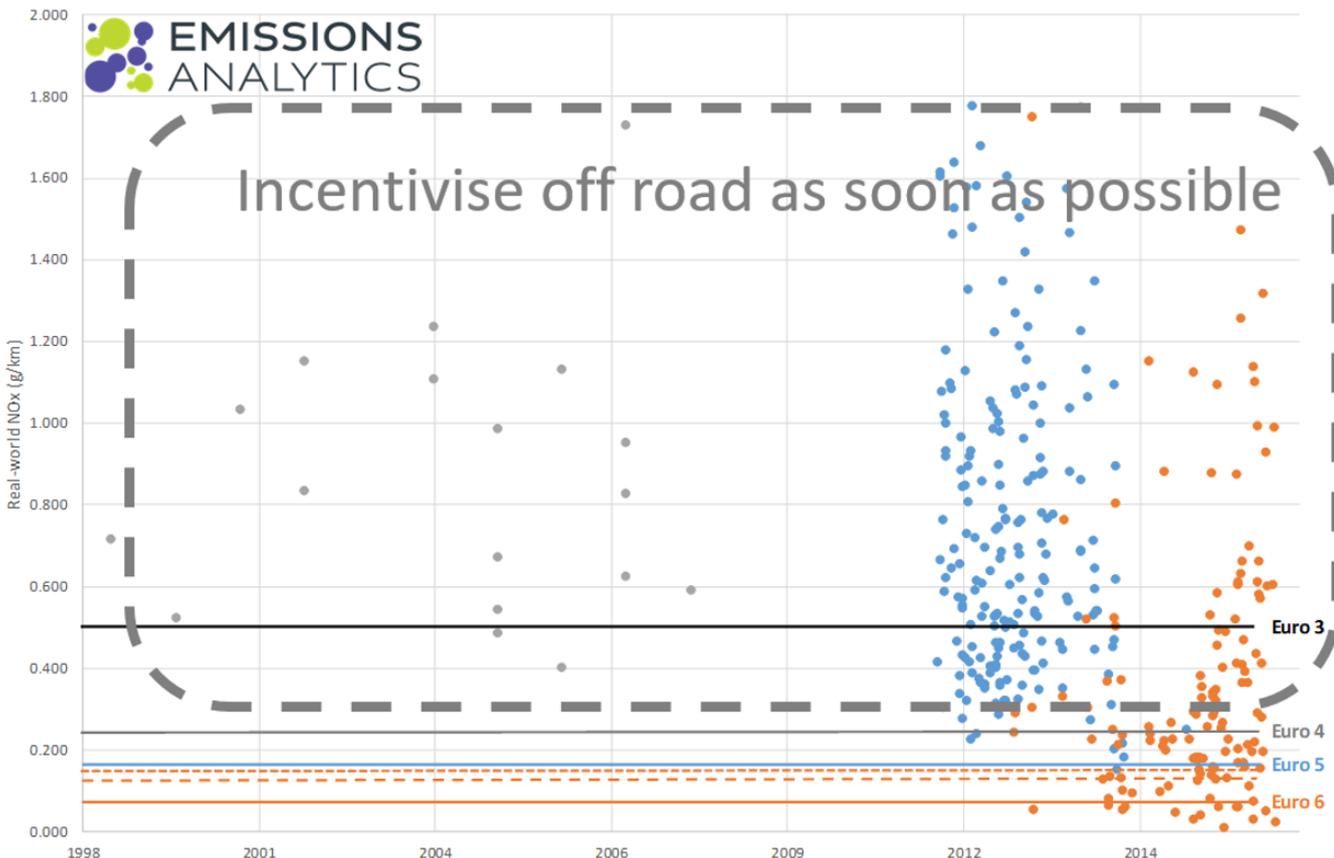


# EMISSIONS ANALYTICS

## Cutting pollution and improving public health

Pollution is a major contributor to chronic human sickness, not just environmental damage, according to the 2017 annual report of England's Chief Medical Officer, Professor Dame Sally Davies, released on 2 March 2018: <https://www.gov.uk/government/publications/chief-medical-officer-annual-report-2017-health-impacts-of-all-pollution-what-do-we-know>. The report made 22 policy recommendations, many of which related to monitoring and ameliorating pollutant emissions .

Emissions Analytics is pleased to have had its EQUA Index real-world emissions rating system ([www.equaindex.com](http://www.equaindex.com)) cited in the report. With the failure of the previous EU vehicles emissions regulatory regime, having led to around 40 million high-NO<sub>x</sub>-emitting diesels on European roads, the need to base policy on real-world emissions has grown, as illustrated in the chart below. Each point represents a vehicle we have tested, and the horizontal line shows the regulated limits



It is clear that at each Euro stage the cleanest vehicles have been getting cleaner, while the dirtiest vehicles have not. Therefore, any system of discriminating between vehicles based only on Euro stage will be highly inefficient as it will involve permitting some vehicles with high real-world emissions. The particularly problematic Euro stages are 5 and 6, within which there are significant spreads from the best to the worst. For example, the dirtiest Euro 6 diesels are six to seven times higher emitting than the cleanest Euro 5. More striking still, the dirtiest Euro 6 diesels are around three times worse than the cleanest Euro 3/4 vehicles, last of which were type-approved in 2009.

In summary, using the EQUA Indices would allow governments and cities to target only those vehicles which are high emitting in practice, minimising the private and public cost. Any system based only on official Euro standards would be costlier and less efficient. Estimates of the benefit suggest that 54% of Euro 6 diesels would have to be restricted from urban areas to achieve an 87% reduction in nitrogen oxide emissions .

Many of the Chief Medical Officer's recommendations revolve around the need for evidence-based action. This has been dramatically lacking in emissions policy, due to the difficult choices it would present.

One recommendation specifically calls on local government and public health professionals to implement concrete solutions. The Mayor of London's publishing of the EQUA Aq ratings for NO<sub>x</sub> on its official website ([www.london.gov.uk/cleaner-vehicle-checker/](http://www.london.gov.uk/cleaner-vehicle-checker/)) is an example of proven action that could be applied in any city across Europe. Another recommendation talks about providing toolkits to assist local authorities. With the challenges of Clean Air Zones, the priority is to link up the existing empirical evidence with policy action on the ground.

An example of this is when regulating against particulate number emissions: current certification of particle number (PN) emissions is down to 23 nanometres in size. However, ambient pollution laws still focus on PM<sub>2.5</sub>, or 2500 nanometres in size. The concern about ultrafine particles has been growing, as the penetration of direct injection gasoline engines has increased.

Latest test data from Emissions Analytics also suggests that certain diesels are now lower in CO<sub>2</sub>, carbon monoxide (CO) and PN emissions than many gasoline cars, and equivalent levels of NO<sub>x</sub>. This should be carefully borne in mind as policy increasingly slants away from all diesels.

The Chief Medical Officer's report also recommends a standardised approach to pollution surveillance and road charging to give vehicle drivers a simple and consistent system. While the new Real Driving Emissions (RDE) regulation is robust, it is not simple and consistent, which will limit its effect in rebuilding consumer trust. In particular, previously launched cars will not be systematically retested on RDE and therefore there will be no comparability with new cars.

Finally, the current lack of trust in car manufacturers is not to the benefit of them, consumers, the market or society. A further recommendation calls for transparency on the part of industry as to the polluting effect of their activities. Emissions Analytics believes this is a necessary first step to rebuilding that trust.

Emissions Analytics hopes the simple, independent and free-access nature of the EQUA Index is a good place to start to reassert evidence-based policy and the health of the automotive industry.