

EDITORIALS



Dirty diesel

Cities and citizens choke while the government looks the other way

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In the 19th century, John Snow correctly identified the Broad Street pump as the source of a cholera outbreak in Soho, but a subsequent inquiry by the Board of Health decided that there was no reason to act.¹

The response of the UK government to air pollution displays a similar lack of foresight. The main problem is diesel. Not only do we have a legacy of dirty lorries, buses, and taxis; the UK, along with much of Europe, has tragically adopted diesel as the main fuel for private cars. Before 2000 less than 10% of new cars sold in the UK were diesel. Now the figure is over 50%. Furthermore the amount of nitrogen dioxide (NO₂) emitted by most diesel cars on the road is 4-5 times the EU limits allowed in laboratory tests. Illegal defeat devices installed by Volkswagens enabled NO₂ emissions up to 40 times the EU limit.

For the past six years, the UK government has refused to implement the 2008 EU Air Quality Directive on the grounds that EU directives can be implemented by individual countries when convenient. However, the law does not recognise this defence, and the directive stipulates clearly defined limits as well as deadlines for compliance. For NO₂, the annual limit is 40 µg/m³ of air. The compliance date was the now distant 1 January 2010.

Thanks to our reliance on diesel, nowhere in central London or most other large UK cities complies with the EU standard for NO₂. Thus, in 2012, the environmental advocacy group ClientEarth sued the government. The case finally reached the Supreme Court in 2015, which found against the government and ordered it to produce an effective action plan. The government failed to do so and has now been ordered to remedy the situation by 2020.²

This judgment is momentous, not least because the EU commission can impose swinging fines on the government if it fails to comply, a scenario that will doubtless foment demands for an early Brexit. However, it is the public who will suffer most if the government evades its public health responsibilities.

Air pollution is now one of the main causes of premature death in the UK, second only to smoking, with 29 000 deaths attributed to particulates and 23 500 to NO₂.^{3 4} In February 2016, a joint report by the Royal College of Physicians and the Royal College of Paediatrics and Child Health estimated that there are 40 000

deaths annually from outdoor air pollution in the UK and identified multiple medical conditions associated with higher exposure to particulates, ozone, and NO₂. These include heart disease, stroke, lung disease (including cancer), diabetes, obesity, and dementia.⁵ The cost to the NHS was over £20bn annually; yet the then chancellor, George Osborne, did not even refer to this report when announcing that there would be no increased tax on diesel fuel in the March 2016 budget.

The royal colleges' report also identified neuropsychological effects from exposure to small particulates (PM_{2.5}) and ultrafine particulates (0.1 µm), which can cross the placental and the blood-brain barriers. Some studies have shown an IQ deficit of 4 points in more highly exposed children.⁶ Since these effects have no threshold, they represent a re-run of the neurocognitive deficit identified in the late 1970s from exposure to lead.^{7 8} There are many similarities between the campaign to remove lead from petrol in the 80s and the current uproar over diesel. One big difference is that campaigners now have the support of the medical profession in the UK.

Further evidence has recently emerged linking maternal exposure to polycyclic aromatic hydrocarbons (PAHs) and mental health problems in children of primary school age.^{9 10} Again diesel exhausts are the main source. One of these studies was in non-smoking mothers in New York⁹ and is of particular concern to the UK, where the proportion of diesel cars is much higher than in the US and the current epidemic of mental health problems among children remains largely unexplained. Further research is urgently needed. Currently there are no EU limits for PAHs, though benzo[a]pyrene is monitored because of its carcinogenic potential. In 2015, 88% of the urban population in the EU was exposed to levels of benzo[a]pyrene above the World Health Organization limit of 0.12 ng/m³.¹¹

The extent to which car manufacturers have been allowed to damage public health in Europe and the UK is scandalous. A new Clean Air Bill is currently making its way through parliament, piloted by the Labour MP Geraint Davies. This bill deserves to be supported by everyone with an interest in the health of the nation.

The quickest and most effective way out of our current predicament is to follow the lead of other European capitals and announce a date by which diesel cars will be banned from city

centres. Secondly, the government needs to ramp up the cost of diesel until usage falls substantially and drivers choose the clean methods of transport which our political leaders could and should have championed 20 years ago.¹²

Competing interests: I have read and understood BMJ policy on declaration of interests and declare that I am on the board of Ebsworth Enterprises, a limited company dedicated to developing and funding environmental technologies. I was involved with CLEAR the Campaign for Lead Free Air from 1981 to 1989.

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