

Fuelling the future: options for UK road transport

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The way we fuel our road traffic is in urgent need of change, given the Government's legally binding duties to protect public health, clean up air pollution and cut CO₂ emissions. In facing up to this inconvenient truth, it is vital that policy-makers are not distracted by convenient fictions suggesting that there is some painless alternative. This briefing sets out the case for action, and the reasons why some suggested solutions would be ineffective in tackling pollution from road traffic.

The policy context

The role of road transport in contributing to lethal and illegal NO_x emissions is clear cut. The Government's Air Quality Plan reports "road transport is responsible for some 80% of NO_x concentrations at roadside, with diesel vehicles the largest source in these local areas of greatest concern. This is due to both the significant growth in vehicle numbers, particularly diesel vehicles, and improvements in real world testing showing that laboratory test-based emission standards have not delivered expected reductions under real world driving conditions."¹ Motorists and their passengers are particularly exposed to this pollution.

In addition, the Committee on Climate Change (UK CCC) reports that transport has grown both in absolute terms and as a share of overall emissions. Transport is now the largest-emitting sector of the UK economy at 126 MtCO₂e, accounting for 28 per cent of UK greenhouse gas (GHG) emissions in 2017: it advises that "stretching CO₂ targets" for new cars and vans are needed, supported by "a real-world testing regime or actual on-road fuel consumption data" and by "policies to deliver a high uptake of electric vehicles to around 60% of new car and van sales by 2030".²

The UK CCC concludes that "the cost-effective path to meeting future emission reduction targets includes a reduction in transport emissions of 46% from 2017 to 2030." However, the Government's seven year freeze on fuel duty has caused an extra 4.5 million tonnes of CO₂ emissions by encouraging people to switch to cars from public transport.³ Further, as car fuel economy is improving under EU regulations, the real cost of motoring is falling as that of public transport continues to rise. This is undermining progress to the UK's legally binding commitment to reduce carbon emissions by at least 80 per cent from 1990 levels by 2050.

The recent DfT Road to Zero strategy identifies electric vehicles as the way forward, with a supporting role for hydrogen fuel cell vehicles, and to a lesser extent for LPG and CNG. Modern hybrids are seen as an important way of helping motorists make the switch to clean technology. The strategy is clear that ending the sale of conventional petrol and diesel vehicles is central to cleaning up transport emissions.

Its recommendations are based on an independently verified assessment of the environmental performance of the fuels and technologies available to consumers. For retrofit, Road to Zero relies on the expertise of the Low Carbon Vehicle Partnership (LowCVP) and the Energy Saving Trust's Clean Vehicle Retrofit Accreditation Scheme.

This echoes the findings of our recent Tracks research report, that policy mechanisms to ensure the development, purchase and use of vehicles that emit less CO₂ need to be continued, in order to ensure that the development of electric vehicles – and other low emission vehicles – continues.⁴

It is in everyone's interest – particularly motorists – to tackle air pollution from motor vehicles in the most effective way possible.

¹ DEFRA/DfT: Improving air quality in the UK: tackling nitrogen dioxide in our towns and cities (May 2017)

² Committee on Climate Change: Reducing UK emissions 2018 Progress Report to Parliament (June 2018)

³ Greener Journeys: The Unintended Consequences of Freezing Fuel Duty (June 2018)

⁴ Campaign for Better Transport: Air pollution and transport: time to clear the air? (March 2018)

Suggested 'alternatives' to cutting pollution and why they won't work

There have however been suggestions that alternative ways of cutting pollution would allow continued use of fossil fuels. Some of these have come from Fair Fuel UK (FFUK), which is a pressure group that is opposed to any fiscal or pricing measures to address the road traffic fuel challenge. Their website states “37m UK drivers pay the exchequer £50 billion each year, and should not pay a penny more to improve air quality”. They claim that there are alternative “effective, proven and practical ways to lower vehicle emissions” which would allow the use of fossil fuels to continue.⁵

FFUK identifies five solutions:

- Green Plus (a smog reducing fuel additive)
- OptiDiesel (a diesel fuel additive)
- E10 (ethanol-enriched petrol)
- CGON electrolyser (a filter)
- Sustainable flow (a system of magnets).

Of these, only E10 (petrol with 10 per cent ethanol) has any independent evidence base to support it. The attraction of E10 is that it already complies with regulated fuel specifications and that 95 per cent of conventionally petrol fuelled vehicles can use it. The Low Carbon Vehicle Partnership reports that E10 petrol provides a modest (2 or 3 per cent) carbon saving in gasoline vehicles. The Government recently launched a consultation on licensing E10 petrol in the UK. While its use is to be welcomed, E10 will not deliver the 80 per cent carbon saving required to meet binding carbon budgets and has limited benefit in cutting NOx emissions.⁶

Of the other solutions proposed by FFUK, none has been through the independent emission testing process developed by LowCVP and endorsed by the Government, nor any robust real world driving emissions tests advocated by the UK CCC and others.

Fuel additives, such as Green Plus and OptiDiesel, are the subject of millions of pounds in R&D and if successful are rolled out in commercial petrol and diesel supplies. UK road fuel is already of a very well controlled quality, so it is unlikely that such post-pump additives would deliver any significant benefits.

We have seen no independent evidence that the CGON electrolyser or Sustainable flow magnets, would work: we would encourage these to go through the LowCVP emission testing process. However, even their wildly optimistic claims to reduce CO2 emissions by up to 50 per cent fall far short of the step change required by UK CCC to meet the target of reducing emissions by at least 80 per cent by 2050.

Conclusion

FFUK's list of “effective proven and practical” alternatives does not live up its billing. Like the magic weight loss pills that claim to offer an alternative to diet and exercise, FFUK seeks to avoid the inconvenient truth that a systematic change is necessary and long overdue. From individuals, this may be understandable: as public policy, it would be unforgivable.

There is an urgent need to unite behind a programme of decarbonising road traffic, through switching to electric vehicles and other independently proven low carbon technologies, combined with policies to cut the level of road traffic, in order to address wider issues of traffic congestion and public health. Cutting pollution and traffic will benefit motorists too, by giving them choice and cutting costly car dependence.

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Campaign for Better Transport's vision is a country where communities have affordable transport that improves quality of life and protects the environment. Achieving our vision requires substantial changes to UK transport policy which we aim to achieve by providing well-researched, practical solutions that gain support from both decision-makers and the public.

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⁵ FairFuelUK <https://www.fairfueluk.com/low-emissions-solutions.html>

⁶ Low Carbon Vehicle Partnership: Successfully Deploying E10 Petrol (March 2017)