

Written Evidence Submitted by the Centre for Policy Studies

(HNZ0005)

In June 2020, the Centre for Policy Studies published [Driving Change: How Hydrogen Can Fuel A Transport Revolution](#). The report was an examination of how low-carbon hydrogen could be used to decarbonise particularly hard-to-abate elements of the transport network – for which electrification might not necessarily be as practical a route to decarbonisation. But the report also acknowledged that low-carbon hydrogen could – and by all indications will – play a key role in decarbonising other parts of the economy, such as certain industrial processes and heating. Hydrogen can also serve as a means of large-scale energy storage and thus complement the ascent of renewables which, despite dramatic improvements of late, remain variable in their production of electricity.

Driving Change culminated with a series of recommendations which aimed at scaling up hydrogen production and demand, in ways consistent with our faith in the private sector and free-market economics. They included the below three proposals, which we believe should aid the Committee with regards to Question 1, Bullet Point 2 of the Inquiry, concerning ‘any other recommended measures’ which could drive the growth of low-carbon hydrogen:

- 1. Reformation of the Bus Service Operators Grant from a ‘fuel used’ model to a ‘distance travelled’ model.**

The Bus Service Operators Grant (BSOG) is a government subsidy to make bus travel cheaper than it would be under true market conditions. In 2018-19 (the most recent full year not affected by the COVID-19 pandemic), £202 million was allocated to English bus operators. BSOG payments are based on the volume of fuel consumed by bus operators – allocating 34.57 pence per litre of diesel or biofuel fuel consumed, 32.66 pence per litre of unleaded petrol, and 18.8 pence per kilogram of natural gas or other road fuel gas. Certified low-carbon operators can also claim an additional six pence per kilometre travelled.

Doubtlessly, the BSOG helps in incentivising bus travel, and lowers carbon emissions and air pollution by reducing the necessity for private car travel, all other things being equal. However, there is good reason to believe a reformed BSOG could deliver better value for money, and be a more effective tool in decarbonising bus fleets.

As the BSOG is largely paid in accordance with the amount of fuel a bus uses, it fundamentally incentivises fuel consumption before all else. However, if the purpose of the BSOG is to increase bus services above what they would be under actual market conditions, there are surely better variables to try and incentivise. A BSOG which incentivises distance travelled would be a much more sensible end to encourage.

If the Government is to continue subsidising bus travel through the BSOG, officials within the Department for Transport should model changing from a consumption-based subsidy to a distance-based subsidy. They would need to calculate at what level that should be set (on a per kilometre measure), so as not to lead to a reduction in the current provision of bus services.

In addition, civil servants should look to reform how the BSOG rewards low-carbon buses. As mentioned, low-carbon buses can currently claim six pence per kilometre driven. There could be an argument to increase this, so as to further incentivise the uptake of cleaner buses. In order to limit the costs of doing so, this could be funded by better apportioning the overall envelope of BSOG support – with a higher proportion going towards rewarding distance travelled by low-carbon buses, and a lower proportion towards the quantity of fuel consumed by all buses (which, of course, we would hope to see changed to a distance-based model itself).

Other reforms could include reviewing what qualifies as a low-emissions bus which is liable for the additional payment, potentially moving one day towards a system which only subsidises zero-emission buses rather than ultra-low emission buses that still produce some emissions.

2. Reform the Renewable Transport Fuels Obligation to better support the production of sustainable hydrogen.

The Renewable Transport Fuel Obligation (RTFO) mandates that significant suppliers of transport and non-road mobile machinery fuel (those dispensing more than 450,000 litres a year or equivalent) must ensure a certain proportion comes from renewable or sustainable sources.

Under the RTFO, companies which supply qualifying renewable fuels receive Renewable Transport Fuel Certificates (RTFCs). Fuel suppliers which are subject to the RTFO are accordingly required to redeem a certain number of RTFCs in proportion to the volume of non-renewable fuels they supply. The RTFO is a key plank of the Government's overall strategy for transport decarbonisation, with the current objective for the proportion of fuel to reach 12.4 per cent by 2032.

From January 1, 2019, the Government has had a target for 'development fuels' under the RTFO. These development fuels are fuels made from either certain sustainable waste products or residues, or a renewable fuel of non-biological origin (RFNBO). According to the Government itself, the simplest RFNBO is renewable hydrogen, for example hydrogen which is made from wind or solar powered electrolysis. The Government wishes to incentivise the production of development fuels because they deem them to be part of "the UK's long term strategic needs". Accordingly, development fuels attract double the number of RTFCs per unit supplied.

Just as the Government has targets for increasing the supply of renewable transport fuels altogether, it also has specific sub-targets for the share of which the total fuel supply comprises of development fuels. For 2020, this stood at 0.075 per cent, with an intention for supply to gradually increase year on year, until it stands at 1.4 per cent of total supply in 2032. The Government should closely monitor progress towards the achievement of these targets, and not be afraid to amend regulations which support the supply of development fuels if it appears that a target will not be hit.

An obvious starting point, for instance, would be to increase the multiplier awarded for the production of development fuels above its current rate of two.

Other modifications could also be made to current RTFO rules which ensure that it is as sustainable as possible, while also supporting genuinely environmentally friendly methods of renewable energy generation. A perennially contentious issue with biofuels is that some of them deliver only marginal environmental benefits, and may even increase net greenhouse gas emissions. So called 'first generation' biofuels – such as bioethanol made from cereals or root crops – have been criticised on the basis that they compete with food production. Biofuels of this sort, therefore, necessitate more agriculture than the case was previously, which can harm the environment. This can be particularly unhelpful with regards to greenhouse gas emissions when it leads to the conversion of previously uncultivated carbon sinks like woodlands or grasslands.

There are already some limitations around how biofuels are treated under the RTFO. In 2017, the Government introduced a 'crop cap', which curbs the amount of renewable fuel which can come from crop-based sources. This was initially set at four per cent, and under current plans will slowly fall to two per cent by 2032.

Owing to the potentially damaging consequences of first-generation biofuels, the Government should also consider setting a future target to eliminate their contribution to the RTFO entirely. This would signal to current biofuel producers that they cannot rely on them being a permanent feature of the transport fuel market, as well as incentivising production of second and third generation biofuels which are demonstrably better for the environment.

In doing so, the Government should acknowledge that biofuel producers have invested considerable sums of money in plants and machinery which use crop feedstocks, and also that first generation biofuels serve as a necessary stepping stone towards developing more advanced biofuels. The Government should therefore work with the biofuel industry on mapping out a sensible schedule for the phasing out of first-generation biofuels from the RTFO – ensuring that the RTFO only supports truly sustainable fuel sources which make a meaningful and positive impact on reducing greenhouse gas emissions.

3. Support local authorities to establish and expand Clean Air Zones to improve air quality in their jurisdictions.

Clean Air Zones (CAZs) are legal or voluntary frameworks which seek to improve air quality in a given area. CAZs fall into two categories – charging and non-charging, which stipulate whether or not a CAZ will charge certain motorists a fee for driving into a CAZ or not. For charging CAZs, further sub-categorisation applies, based upon what types of vehicle fall in scope of its charges. These range from Class A zones (which cover buses, coaches, taxis and private hire vehicles) to Class D zones (which cover all of the aforementioned vehicles, plus HGVs, LGVs and ordinary passenger cars).

One CAZ already exists in England, in the form of London's Ultra Low Emission Zone (ULEZ). Introduced in 2019, London's ULEZ currently covers much of the centre of the capital, and will

extend to the North and South Circular by October 25, 2021. Cars, motorcycles and vans which are not compliant with the ULEZ's minimum emissions standards will be charged £12.50 per day to drive in the ULEZ (on top of the existing Congestion Charge), while heavier vehicles like buses and lorries will be liable for a £100 daily charge.

Other areas were due to introduce CAZs in 2020, however owing to the COVID-19 pandemic these were, understandably, postponed until 2021 or later. When they do come into force, they will be a mixture of charging and non-charging CAZs. Cities including Birmingham, Bristol, and Greater Manchester will introduce charging CAZs, while Southampton will introduce a non-charging CAZ.

According to the Government's own advice, CAZs are the most effective lever to drive compliance on existing air quality targets. In London, evidence suggests the ULEZ has been remarkably successful – cutting roadside NO₂ concentrations by over a third and reducing the number of highly polluting vehicles driving into the ULEZ each day by 13,500.

CAZs – especially the charging variety – help address not only dangerously high levels of air pollution and excessive greenhouse gas emissions, but other social problems, such as noise pollution and congestion. Charging CAZs could even be used as the kernel of a system of full-blooded road pricing, the quid pro quo for which would be the abolition of other motoring taxes, such as fuel duty. This method of taxation would be more environmentally friendly, economically rational, socially equitable, and ensure that the Treasury generates the revenues necessary for maintaining existing road infrastructure.

For the purpose of our report and this inquiry, however, the importance of CAZs is that they incentivise the decarbonisation of transport, as those vehicles that have to enter city centres will need to be cleaner to avoid paying costly charges. However, during our research, we heard that local authorities often struggle to understand how best to implement CAZs, or run into difficulties when trying to do so.

Historically, central government has delegated considerable responsibility to local authorities with regards to establishing CAZs, without simultaneously providing adequate support structures – such as legal advice or technical know-how. During our research, we found there was a general feeling of central government playing a rather inconspicuous, or even at times obstinate role in introducing CAZs. Going forward, a more cooperative relationship needs to be struck between central government and any local authorities who are implementing, or wish to implement, CAZs.

Establishing CAZs may require central government to provide upfront funding for the required infrastructure (cameras, signage and road markings), plus other costs associated with their introduction, such as public awareness campaigns. Preferably, this could be found by rationalising any current schemes or subsidies aimed at ameliorating air quality which the CAZs should render unnecessary – or, at least, less necessary. Or the Government may just accept that paying some money now could be prudent in the long run if it means tackling a genuine public bad.

To bolster the case for local authorities to implement expanded CAZs, the Government could tie various funding streams to their adoption – such as the Air Quality Grant, which since 1997 has disbursed over £64 million to local councils for air quality improvement measures Targeting the existing funding for low- and zero-carbon transport infrastructure, which allows individuals to switch away from high-carbon transport, would likely neuter much opposition to CAZs, which is often based upon arguments around lack of alternative transport provision. Of course, other funding arrangements could also be explored, such as central government providing loans to local and combined authorities, which are then paid back over time via the proceeds of revenues generated by charging CAZs.

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