



Low Carbon Fuel Strategy: Call for Ideas

Consultation Response

April 2022

1. Summary

This submission summarises Transport and Environment (T&E's) views in response to the questions posed in the Department for Transport's [Low Carbon Fuels Strategy: Call for Ideas](#).

T&E is Europe's foremost sustainable transport think tank and environmental group. It is a federation of almost 60 national organisations across the UK and Europe campaigning for greener transport. Our work has informed and influenced key European Union and national policies and we regularly brief UK Government Ministers, officials and other key stakeholders on the steps needed to decarbonise transport.

To date, the UK's transport sector has a poor decarbonisation record. Surface transport remains the UK's highest emitting sector and, pre-pandemic, [emissions had remained broadly level over the previous decade](#). Emissions from aviation have risen dramatically since 1990, and in 2019 were at the highest they had ever been. In total, in 2019 transport emissions were [responsible for 27% of the UK's emissions](#). Only the pandemic reduced emissions significantly. Nevertheless, low carbon fuels have had an effect since the Renewable Transport Fuels Obligation (RTFO) was introduced, and it has served us well. However, there now needs to be a shift in Government thinking. The RTFO has fed liquid fuels into the road transport system, but we now know that the vast majority of future low carbon fuels will be electricity and hydrogen-based. Whilst liquid road fuels will be with us until (at least) the 2040s, the Department for Transport's (DfT) strategy should now be to electrify the UK's road fleet as quickly as possible, whilst ensuring that liquid fuel production and consumption increasingly shifts into the aviation and maritime sectors. The RTFO either needs to be adapted to do just that, or be increasingly supplemented by other policy mechanisms.

The end point for fuelling transport is clear. By 2050, the vast majority of road vehicles in the UK will be zero tailpipe emission (the only exceptions will be a small number of "classic" cars). In all probability, this will mean they are all electrified: whilst there is some talk now of hydrogen buses and HGVs, these would be more expensive to run, would require a refuelling network that does not exist at present, and most importantly, would prevent hydrogen going into the aviation and maritime sectors. Planes will be fuelled by a combination of electricity, hydrogen and waste-based sustainable aviation fuel (SAF). Ships will be fuelled by electricity and ammonia.

The main driver of this change will be Government policy. There are many policies both proposed and in place that will convert the UK's transport fleet to zero emission alternatives. This call for ideas has two

distinct suggestions that will enhance policy further. Firstly, that renewable electricity be included in the RTFO. Secondly, that the *Support, Regulate, Ban* framework be consistently implemented.

2. Fundamental Shift Away from Liquid Fuels Occuring

The call for ideas was focused on liquid lower-carbon fuels, which fall under the remit of the RTFO. This was introduced in 2008, and at that time the Climate Change Act targeted an 80% reduction (from a 1990 baseline) in the UKs greenhouse gas emissions by 2050. Crucially, it was unknown how, and even if, transport would be decarbonised. The world is very different now. The UK is now legally committed to net zero emissions by 2050. This means that all sectors that can be (absolute) zero emission, should be. Furthermore, we also know that the majority of road vehicles will be electrified: many car manufacturers, including Ford and Vauxhall, have now pledged to only sell zero-emission vehicles post 2030. Battery electric cars are already far cheaper to run than petrol or diesel models, and should reach up-front [price parity \(in all market segments\) by 2027](#). Vans and trucks are further behind in their introduction, but are following the same path. On a total cost of ownership basis, [electric vans are already cheaper to run than their fossil counterparts](#). Overall, this means that the RTFO as currently is has a limited lifespan. UK suppliers producing low carbon fuels will find their existing market will simply wither and die.

Therefore, in the long term, the RTFO either needs to be adapted to the future, or wound up. Adapting it for the future means including electricity as an eligible fuel, whilst liquid fuels are shifted to other sectors. These fuels will need to have the following characteristics. They should be:

- Scalable
- Sustainable
- Increasingly closer to zero emission

It should be noted that the RTFO has been constantly adapted throughout its lifetime, and therefore changes are not new: there have been constant changes to obligation, as new fuels were recognised and understanding of environmental impacts were increasingly recognised (eg in 2018, when indirect land use change was recognised). However, looking at the above characteristics clearly shows that some fuels currently eligible for the RTFO should not be considered as future fuels:

Scalable

Fuels should be scalable: this means that they should be able to satisfy a large percentage of transportation's fuel demands. This further means that fuels that will only ever be niche, such as biomethane, should not be supported (note that this does not preclude biomethane being used in transport in the UK: if the market finds a role for it, then there is no problem with its "unsubsidised" use, although there are question marks as to if biomethane would be better used in the gas grid). Scalable fuels include electricity, green hydrogen, waste-based fuels and synthetic fuels.

Sustainable

Fuels should also be sustainable. Whilst this may sound an obvious statement to make, the RTFO in its current form rewards biofuels from energy crops by providing double the number of certificates. At the moment, crop-derived biofuels are allowed to meet a supplier's obligation, however these are increasingly recognised as unsuitable for use as a fuel. Biofuels from crops never made sense. Most are worse for the climate, all are worse for biodiversity, and they have always contributed to higher food prices and greater price volatility.

Globally, [the top three feedstocks used for biodiesel in 2019 were palm, soy and rapeseed oil, together accounting for 78% of total consumption](#). For ethanol (that is then blended into petrol), [the most common European feedstocks are wheat, corn and sugar beet](#). In the UK, 37% of bioethanol burnt was made from Ukrainian corn. It is highly likely that supplies from both Ukraine and Russia will be severely disrupted over the coming years: to keep demanding that food crops power our cars is irresponsible, and the Government should immediately remove crop-based biofuels from the RTFO.

Increasingly closer to zero emission

Liquid fuels should be as close to zero lifecycle emissions as possible. In an example of how not to do it, CORSIA, the flawed offsetting scheme implemented by ICAO considers SAF to be any fuel that achieves net greenhouse gas reductions of at least 10%. Clearly burning fuel that only reduces reductions by 10% will not get the UK anywhere near its 2050 net zero targets, and so liquid fuels should have to have a minimum 70% lifecycle carbon saving, and this should incrementally increase the closer we get to 2050. Any electricity used for fuelling transport should come from zero carbon sources, and any hydrogen should be created via electrolysis only.

3. Policies required

The policy framework for achieving this shift towards electricity and hydrogen-based fuels is already beginning to take shape. The UK has made numerous policy announcements around zero emission vehicles. The Government also launched its [Hydrogen Strategy](#) in August 2021. The Government is also consulting about the exact details of a sustainable aviation fuel mandate. However, there are still concerns, and in particular, there is a concern about the UK's electric vehicle charging infrastructure. The recently released [Electric Vehicle Infrastructure Strategy](#) has ambitions to have around 300,000 public charge points by 2030, but did not include any interim targets, nor any proposals to tackle planning delays or requirements on car park operators to install charge points.

One mechanism to boost the supply of charging infrastructure is to include renewable electricity in the RTFO. This is not a new idea: indeed, in the EU renewable electricity counts alongside biofuels towards targets set under Red II. This is also the case under the California Low Carbon Fuel Standard. Suppliers of renewable electricity were previously able to claim credits under the GHG Regs in the UK, although that ended in 2020. It is therefore an anomaly that renewable electricity is not in the RTFO. Introducing it would provide a more comparable terms between hydrogen vehicles and battery electric vehicles: green hydrogen is currently eligible for 'development' RTFCs whereas green electricity is not. Support for renewable electricity under the RTFO could be used as an additional signal to the market supporting EV

infrastructure deployment. It would shift the economics of charging infrastructure, and would therefore encourage more to be built at a faster rate - and would thus be a mechanism to achieve the Government's 2030 charging infrastructure ambitions. [T&E has previously proposed bringing electricity into the RTFO.](#)

Additionally, the *Support, Regulate, Ban* framework should be explicitly used. The framework was first described in a [T&E policy paper on how to increase the numbers of zero emission planes and SAF volumes in the UK](#), and using this framework would provide more policy certainty to investors and industry than individual measures applied in isolation. The framework is (unintentionally) already in place with regards to electric cars: government support, via purchase grants, has been instrumental in getting more electric cars onto our roads. However this support will (rightly) be finishing soon. In its place the UK will have a Zero Emission Vehicles (ZEV) mandate, where manufacturers will be required to supply an increasing percentage of electric cars. Finally, the sale of new vehicles with a tailpipe will be banned from 2035. This framework can, and should be used for many other aspects of the decarbonisation of transport. For instance, the Government has already announced that a [rapid charging fund will be available to help motorway and major A road service operators prepare for 100% zero emission vehicles.](#) The next step would then be to regulate service stations: requiring them to be able to charge an increasingly larger number of vehicles. The final stage would be to ban operators from selling fossil petrol and diesel from a future date (this should be 2050 to coincide with the UK's net zero target).

3. Conclusions

Decarbonising transport can only be achieved through an end to the use of all fossil fuels by 2050. It is now very clear that this will involve electrifying all road transport, and some short-range boats and planes. Accordingly, renewable electricity will be the most demanded fuel of choice in the future. Government policy now has to shift to recognise this. Policies must move non-fossil liquid fuels from being burnt in cars and trucks, to being burnt in ships and planes. First generation biofuels have no place, and should be quickly phased out. A lot of maritime and aviation fuel will come from combining green hydrogen with nitrogen or carbon (for ships or planes respectively), and this will require yet more renewable electricity. To incentivise electricity production and delivery, this paper has suggested incorporating electricity into the RTFO, and to ensure greater policy certainty for all concerned parties, the *Support, Regulate, Ban* framework should be used where possible.

Further information

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