

# Renewable Transport Fuel Association

## Response to DfT's TDP – call for ideas

### Your details

Your (used for contact details only):

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**Are you responding:**

as an individual?

on behalf of an organisation? On behalf of an organisation – the Renewable Transport Fuel Association

### Organisation details

**What is the approximate total number of employees in your organisation?**

1 to 29

**What best describes your organisation?**

Other: A newly-established trade association.

The RTFA was launched on 25th August, as the voice of UK renewable fuel producers and suppliers. Its 12 founder member companies (Associated British Foods, ABSL, Alcogroup, Argent Energy, Calor, CNG Fuels, Ensus UK Limited, Gasrec, Greenergy, Nova Pangaea, Olleco, Velocys) comprise all UK manufacturers of liquid biofuels along with the majority of green gas suppliers.

### RTFA general comments

Actions need to be taken to reduce carbon emissions immediately. Sustainable renewable fuels such as biomethane, biodiesel, bioethanol and biopropane are available today and there is a huge opportunity to unlock further potential in their production and in innovation in this sector. These fuels can make a material difference to UK carbon emissions, and do so in a relatively short timescale.

The decarbonisation of transport is a monumental challenge. As of 2016 it became the highest carbon emitting sector of the economy, overtaking energy production. It

encompasses some of the most difficult activities to decarbonise, such as aviation, heavy road freight and maritime. Ideas abound for how these and other transport modes can be decarbonised, but the technical and investment challenges in getting from here to the desired destination are massive. Only with a clear strategy and bold actions from Government, and policies that encourage industry to invest, can the goal of decarbonising the sector be achieved.

Waiting for these challenges to be overcome would be the worst outcome as it may be decades before technology advances to the point where electric batteries, green hydrogen or catenary systems are economic and practical. Our view is, that although correct, to target zero emissions it may be practical to accept that some transport sectors will be ultra-low emission as the final step to zero can only be achieved at a very high price.

In the hardest sectors to decarbonise, heavy transport, maritime and aviation, the use of sustainable renewable fuels is both a practical way to reduce carbon emissions immediately and may provide a pathway that compares favourably to electric and hydrogen solutions over the medium to longer term.

We believe the view, often expressed by the Climate Change Committee, that the availability of biomass is very limited, is wrong and technology is just as likely to find new ways of accessing a wider range of biomass feedstocks as it is to deliver improvements in electric and hydrogen. In any event, concern over long-term availability should not be a reason to constrain the role that biomass-based fuels can play.

The focus of the RTFA is to draw attention to the near-term benefits that renewable fuels can deliver. Admittedly this is a narrow focus. There are many other actions, such as those set out in the IMechE Transport Hierarchy that should also be pursued as a priority, but actions on fuels must be taken *in parallel*. Their importance goes beyond the near-term carbon savings that they can bring, for it is these companies that will need to invest in the enduring sustainable liquid and gas-based fuels of a net zero world.

**What do you think government should be doing to reduce the greenhouse gases that are produced from:**

## **cars?**

There are 32.6 million cars on the UK roads, of which >1% (279,000) are electric vehicles.

There are a number of actions that can, and should, be implemented immediately, to bring down emissions from the current car parc. The focus on electrification must not side-track Government from acting on the following:

- Introducing E10 in April 2021, or failing that, in September 2021. This would have a larger impact on the UK's GHG emissions in the near term than any other policy currently under consideration. Given amount of time its implementation has already been delayed, any later would be totally unacceptable. Higher blends of bioethanol will have a role to play beyond this. Once the compatibility of the car parc permits it, E85 could be offered instead of 98RON E5 protection grade.
- Increase the basic target of the RTFO in 2021 to a level which will absorb the

additional bioethanol from the introduction of E10 plus the anticipated growth in biomethane and other renewable fuels. Thereafter the basic target should be increased each year, in order to provide a market pull for the various measures set out below (i.e. driving up the renewable fuel content of standard petrol and diesel grades, growth in renewable gaseous fuels, greater adoption of B20, B30 and B100 in dedicated fleet, the introduction of biodiesel in trains and the replacement of fossil diesel and petrol with drop in fuels).

- For those renewable fuels that are blended into petrol and diesel, the highest blends possible should be mandated for the existing vehicle parc, and the ultimate long term aim net zero aim should be that all ICEs eventually run on 100% renewable fuel. DfT should work with OEMs to determine the extent that biofuels could be included in standard grade fuels, in order to keep the momentum moving forward. The next step after E10 would be to work towards making B10 the standard diesel offered in UK filling stations. The Fuel Quality Directive does permit member states to offer higher biodiesel contents than B7, if they ensure the provision of appropriate information is provided to consumers. ACEA publishes a list of vehicles that are compatible with B10<sup>1</sup>. Given the characteristics of FAME, we do not recommend that further boosting the renewable content of standard diesel is done by the incorporation of more biodiesel. Instead the proportion of renewable drop in fuels meeting the EN590 specification should be increased.
- Do not include range extended electric vehicles (REEVs - also referred to as series hybrids) in the ban of sale of new ICE vehicles. Instead recognize that these vehicles when run entirely on sustainable renewable fuel, have a future in a net zero world. Indeed, depending on the rate of growth in renewable electricity generating capacity, the well to wheel and total lifecycle emissions of such vehicles may be superior to BEVs. At present there may be few of these on the market, but banning them would discourage any further innovation in this sector of vehicles. Instead, Government should actively incentivise their development. They are particularly appropriate for smaller sized cars, where local journeys prevail and only occasional longer use would require the use of the on-board ICE generator. These vehicles could be designed from the outset to be able to run on high blend biofuels. This combination (REEV) with high blend biofuel would deliver extremely low CO<sub>2</sub> emissions. By having a smaller battery pack with an ICE generator, these vehicles would be cheaper to produce and therefore more likely to be purchased by price conscious consumers.
- Government should keep the well to tank emissions of electric vehicles under review. If EVs are to take off to the extent envisaged, then there must be an increase in renewable generating capacity to ensure that the carbon intensity (CI) of grid electricity does not start to increase. It is worth noting that there are very tight specifications for ensuring that hydrogen produced for transport (and rewarded via the RTFO) does not result in increasing the CI of the grid. In short, the only practical way of producing qualifying hydrogen for the RTFO is to have it directly connected to a newly built wind (or solar) farm. This is to ensure that even on a minute to minute marginal timeframe, there is no reduction in renewable electricity feeding into the grid. This contrasts with the approach taken for electric cars.
- Treasury should start to think about how it will replace lost income from fuel duty in the transition to electrification. It would not be appropriate to use an increase fuel duty as a mechanism to push people towards purchasing EVs, if, as is currently the case, the renewable alternatives to diesel and petrol are taxed at the same rate as fossil diesel and petrol. At present EVs benefit significantly in having a 5% VAT rather than 20% and no fuel duty. The sooner that this is considered the better, as clarity should be

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<sup>1</sup> [https://www.acea.be/uploads/publications/ACEA\\_B10\\_compatibility.pdf](https://www.acea.be/uploads/publications/ACEA_B10_compatibility.pdf)

given to those considering purchasing EVs and a transition (to say a road pricing approach) will be more politically-challenging if EV owners are not anticipating this when they make their purchases. The RTFA would be happy to enter into a dialogue with Government on managing the transition.

- There are significant sustainability requirements in place for renewable fuels. Electric vehicles should also be subject to sustainability requirements. The issues are different, in that their environmental impact is front-loaded relative to the ICE cars, and the embodied energy requirements and environmental impacts of sourcing the components for batteries need to be considered. Decarbonisation plans should not encourage the purchase of electric cars with batteries with high embedded emissions, which will only be run at low mileages or which are charged using fossil electricity.

## Buses and coaches?

The Government should increase the basic RTFO target level, as described earlier, in order to encourage;

- the uptake of higher biofuel blends of diesel to be used in the existing fleet of diesel busses
- the blending of drop in fuel to replace fossil diesel where fleet operators are not able to accommodate more biodiesel. (Such drop ins would be expected to comprise HVO, renewable paraffinic diesel or e-fuels)
- the uptake of biomethane-fuelled buses, (and in the longer run busses run on renewable hydrogen.)

The Bus Service Operators Grant and Low Carbon Emission Buses scheme should be reformed to provide a level playing field for the decarbonisation of bus transport through electrification and biofuels. We would be happy to provide advice on sensible amendments to the scheme.

The coach market is a very difficult one to decarbonise. Whereas around 8% of new bus sales are of EVs, there is only one demonstration electric coach. Coaches are split between those used for city centre express services, those for specialist holiday use and older vehicles that are used for school runs and lesser tourist applications. In terms of technology transfer in to the coach sector, it is generally the higher weight rigid truck technology that finds its way into the coach market and this should be borne in mind as DFT supports transition technologies in the rigid truck market.

## Vans and lorries?

### Vans

There are around 5 million vans on the UK's roads, and around 5,000 EVs. Less than 1% of new van sales are BEVs or plug in hybrids.

For vans up to 3.5 tonnes GVW the suggestions provided under the question for cars are appropriate. For larger vans and truck up to 7.5 tons (including specialist vehicles such as ambulances), many of the suggestions made in the bus section are applicable.

Fleet operators should be encouraged to transition to higher blend biofuels. DfT should encourage OEMs to warranty for high blend biofuel use and encourage fleet operators to use this fuel, through education initiatives to this effect. For new vehicles both REEV and electric-only platforms (where drive cycle range allows) are options. Given that Internet shopping has resulted in a large growth of this category, then transition to these options should be encouraged in order to mitigate the vehicle mileage growth of this category.

Hybrid and REEV vehicles could communicate their operating mode with roadside infrastructure, such that they will be charged a levy if they operate their ICE within low emissions zones, and the geographical range could be extended progressively. There is evidence to show that hybrid vehicles do not deliver on their potential for CO2 savings, through poor practices (ie not charging the vehicle and relying on the ICE). This behaviour should be addressed directly, rather than through the banning of such vehicles.

### Rigid Trucks from 7.5te to 16te GVW

Electric version of trucks in this vehicle category, suitable for short journeys, are starting to appear on the market. However, expanding the range by adding more battery capability would impinge on their payload carrying ability. Payloads range from 2Te (7.5te GVW) to 9 te (16te GVW) but adding additional batteries could reduce payloads by 1 to 2 tonnes. Therefore REEV technologies should be encouraged in this category where the on-board generator would use high blend biofuels to minimise the carbon footprint during any use of the on-board generator. These vehicles should utilise GPS ring fencing to enable electric only mode in towns and cities. If OEM manufacturers could be persuaded to warrant high blend biofuel usage this could also provide an interim lower carbon solution for the next 10 years. It should be noted that there are around 170,000 trucks on the UK roads in this category.

### Heavier duty vehicles

There are around 500,000 trucks on the roads, of which <1% new truck sales are EVs. There are <50 BEV/REEV trucks on the road and, as yet, no hydrogen fuel cell trucks. The heavier duty the vehicle, the harder it is to electrify, and the greater the role that fuels can play.

There following are all options

- higher biofuel blends of diesel should be promoted for existing fleets B20, B30 and

## B100

- drop in renewable fuels. These can further boost the renewable content in situations where fleets cannot increase the biodiesel content.
- The introduction of biomethane-fuelled trucks, (and in the longer run trucks run on renewable hydrogen.)

The Government should increase the basic RTFO target level, as described earlier, in order to encourage greater uptake of renewable fuels, and the fuel duty differential for gas should remain in place until 2032.

Rigid Trucks (16te and upwards GVW) are predominantly used for regional distribution. They cover up to around 350 miles per day and range restrictions and payload impacts make full electrification unsuitable. They need a capability of range that is greater than is required for city centre only deliveries. DfT could develop a LEFT 2 programme to encourage the development and testing of REEV technologies where the on-board generator would use high blend / drop in biofuels to minimise the carbon emissions from the on-board generator. These vehicles should utilise GPS ring fencing to enable electric only mode in towns and cities.

Full electrification is unlikely to be the optimal solution for the heaviest HGV category (articulated trucks up to 44te GVW), because of payload impacts. Hydrogen fuel cell HGVs and catenaries will take a long time to develop, and therefore decarbonising through the fuels used should be a big near-term focus.

The most environmentally friendly solution for articulated lorries is drop in or high blend renewable fuels (e.g. biomethane, biodiesel, HVO and renewable paraffinic diesels) and the uptake of high blend biofuels and gaseous fuels should be encouraged in order to give steady decarbonisation of HGVs. When run on totally renewable fuel, these vehicles will deliver the necessary carbon emissions reductions.

## Passenger rail?

Electrification is the key technology for decarbonising rail but there are a large number of long distance, low utilisation routes where the cost of electrification is prohibitive. In the long term some of these routes can use renewable hydrogen but in the near term the only option is to use biodiesel or drop in fuels.

The train industry should be set decarbonisation targets and allocated innovation funding to explore different pathways to reducing emissions. This should recognise the benefits of biofuels as part of the solutions.

## Development Fuels (aviation, marine, freight)

Aviation, maritime and heavy duty trucks are the most challenging transport sectors to decarbonise because the energy density and performance of battery and fuel cell technologies cannot come close to matching liquid hydrocarbon fuel particularly when travelling longer distances. The development fuels sub target of the RTFO, is designed to encourage novel waste-based fuels for these strategically important sectors. However, as well as failing to deliver price certainty, the dRTFC is unsuitable in the long term, as the cost of decarbonising aviation and shipping should fall on the relevant users. Longer term, market-

based obligations outside the RTFO may be appropriate and we understand this is something the DfT is considering. This could be a separate mechanism specifically for the fuels in question – possibly some form of CfD or mandate – although the transition between the RTFO and new mechanism could create a period of uncertainty which would have to be carefully managed. Care would also be needed in order to avoid creating perverse incentives, either for ships or planes to refuel elsewhere or for non-domestic fuel producers to crowd out domestic ones.

Financing first-of-a-kind development fuel projects is challenging, and requires additional financial support and long-term policy stability in order to attract the required levels of investment.

- The Government should invest £500m over five years, matched by industry, to support early stage development fuel facilities that have found it difficult to secure debt finance on the open market. This could be done wholly or partly through providing Government-backed loan guarantees, potentially through reviewing and amending the existing eligibility criteria for the UK Guarantees Scheme.
- It currently costs more to produce development fuels than conventional fuels (in the absence of a carbon price that reflects the full cost of climate change). For potential investors in development fuel facilities, one of the biggest risks is the uncertainty of the value of dRTFCs. An investor has no protection against a fall in the dRTFC price and therefore (in the absence of a trading history) will discount their price heavily to reflect that uncertainty. This makes such projects uneconomic and unfinanceable. A floor price, or its equivalent, is needed to protect investors from losing their money as a result of short-term supply/demand changes – in the long term the demand for sustainable fuels is undoubted.
- At present dRTFCs are only awarded in relation to the biogenic proportion of the waste, whereas municipal and commercial waste contains a mixture of biogenic and non-biogenic components, often bound together in the same item. This means there is no incentive to process the non-biogenic fraction – yet separating it out would be practically very difficult, consume energy and result in a waste stream which would either be burnt, landfilled or released into the environment. Processes should be incentivised through the RTFO to make strategically important fuels from all residual waste that cannot economically be separated or recycled.

We look forward to working with the DfT to expand on these suggestions.