The Association for Renewable Energy and Clean Technology

Consultation Response

New CO_2 emissions regulatory framework for all newly sold road vehicles in the UK

22nd September 2021

Introduction

About the Association for Renewable Energy and Clean Technology ('the REA')

The REA is the UK's largest trade association for renewable energy and clean technology, representing around 550 member companies operating across the heat, power, transport, and circular bioresources sectors. The REA has technology-specific member Forums, each with its own elected Chair and Steering Group. In the case of this consultation response, member interest was received from the REA EV Forum and Renewable Transport Fuels Forum.

The REA EV Forum represents nearly 100 companies operating across the electric vehicle charging infrastructure value chain, from public Charge Point Operators to energy suppliers, eMobility Service Providers, roaming hubs, installers, manufacturers, and financiers. The REA's EV Forum has been active since 2018 and in 2020 the UK Electric Vehicle Supply Equipment Association merged its operations into those of the REA.

The REA's Renewable Transport Fuel Forum has around 50 members with interests in fuel production, project development, supply chain and related areas.

Developing a response to this consultation

This consultation response was developed in consultation with our members, across our EV Forum and Renewable Transport Fuels Forum. The REA held member meetings that specifically covered this consultation once it was published, and additional meetings over the past six months on many of the themes of this consultation prior to its formal publication.

The REA operates a consensus-based policy decision making structure. All members have equal power in the Association (one member, one vote) and significant member feedback was received by the REA to the draft of this consultation response and in past REA workshops.

Individual members have also engaged directly with OZEV workshops and submitted their own response.

The REA's response to this consultation reflects the interests of

Contact

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The full consultation documents can be found here:
https://www.gov.uk/government/consultations/co2-emissions-regulatory-framework-for-all-newly-sold-road-vehicles-in-the-uk

Consultation Questions

Significant Zero Emission Capability

1. What metric, or combination of metrics should be used to set eligibility for cars and vans between 2030 and 2035?

The REA believes that eligibility of "significant zero emission capability" (SZEC) for cars and vans should be based on a combination of the real-world zero emission range of the vehicle and the existence of an electric vehicle charging socket, where appropriate (i.e. not a requirement for vehicles fuelled by a hydrogen fuel cell). This combination of metrics allows Government to ensure that not only can vehicles conforming to SZEC criteria drive a meaningful distance without producing any tailpipe emissions, but they will also be producing minimal well-to-wheel emissions in the process.

Without a requirement for an electric vehicle charging socket on hybrid vehicles, vehicles could be engineered to provide significant zero-emission ranges from batteries that are ultimately charged using energy provided via an internal combustion engine running on fossil fuel. By requiring a minimum zero-emission driving range alongside the requirement for an electric vehicle charging socket, new micro hybrid, mild hybrid and conventional/full hybrid vehicles would therefore be ineligible for sale post 2030.

The REA also suggests that a component of SZEC eligibility should be that all new hybrid vehicles must be configured, by default, to drive in full-electric mode. Vehicle users would be free to override this setting, but such a requirement would prevent consumers from producing unnecessary tailpipe emissions as a result of not understanding or appreciating the different driving modes of a plug-in hybrid vehicle.

2. For your chosen metric, what threshold should new cars and vans be required to meet from 2030?

Based on the REA's preferred metrics, we suggest that, from 2030, all new cars and vans should be able to drive at least 70 miles without producing any tailpipe emissions, under the WLTP test cycle. As the WLTP cycle is not fully representative of real-world driving, we would anticipate that this requirement would ensure that, under real-world conditions, every vehicle would have roughly 50 miles of zero-emission driving range.

Based on data from the 2018 National Travel Survey, the average vehicle user drives 21 miles every day. By ensuring that all vehicles have roughly 50 miles of real-world zero-emission driving range, the average motorist will be able to complete their full day's travel (and potentially several days) without the need to recharge their vehicle.

Were the zero-emission range requirements for SZEC vehicles to be considerably lower, we believe that this would have a negative impact on the efficiency of the UK's public EV charging infrastructure network. There are two reasons for this.

Firstly, plug-in hybrid vehicles with small batteries can be fully recharged relatively quickly and, in some settings (e.g. long-stay car parks, park and rides, urban car parks), the vehicle would likely have achieved full charge long before the owner returns to their vehicle. This would result in the chargepoint being "blocked", meaning that no one else could use it until the owner returned to their vehicle. To improve the consumer experience of, and to get the most from the UK's public EV charging infrastructure network, such incidences must be prevented.

Secondly, plug-in hybrid vehicles with shorter zero-emission range are typically limited to lower charging speeds than battery electric vehicles, meaning they take longer to receive an equivalent amount of charge on many types of public charging infrastructure. This has the effect of reducing the time-efficiency of the chargepoint and, at a larger scale, the overall efficiency and capacity of the charging infrastructure network. By ensuring that SZEC vehicles have larger batteries, we believe that automotive manufacturers are more likely to engineer such vehicles to accept at least 7 kW charge speeds, in order to make the vehicles more appealing to consumers. This will allow SZEC vehicles to charge at the same speed as battery electric vehicles – at least on 7 kW AC charging infrastructure.

As stated in the response to question 1, all new vehicles with a battery-electric or hybrid-electric powertrain should be required to have a charging socket from 2030 onwards.

As also stated in the response to question 1, we believe that all new vehicles with a hybrid-electric powertrain should be required, by default, to be configured to drive in all-electric mode from 2030 onwards. More specifically, when powered on, the vehicle should revert to all-electric mode until the battery is depleted or the vehicle user changes the driving mode. The Government should also consider whether these requirements could be applied to existing plug-in hybrid vehicles, for example, through over-the-air vehicle software updates.

3. What other requirements could be introduced, if any, to maximise zero emission capability?

Whilst it is not a requirement of the vehicles, the REA would like to stress that, from a well-to-wheel perspective, renewable transport fuels can also make an important contribution to achieving net zero emissions in road transport. As set out in the Transport Decarbonisation Plan, they saved 5.4MtCO2eq in 2019, which is the equivalent of taking 2.5 million cars off the road. In the medium term there will continue to be a large demand for fuel in vehicles and it is essential that we ensure that this is as low carbon as possible. Maximising the use of renewable transport fuels can therefore contribute to reducing emissions from new vehicles with hybrid powertrains sold beyond 2030. It will also reduce emissions from the existing stock of ICE and hybrid vehicles, both up to and beyond 2035.

In the context of hydrogen, it is essential that the UK Government is mindful of well-to-wheel emissions when setting regulations for CO2 standards on vehicles. A hydrogen fuel cell electric vehicle will produce no tailpipe CO2 emissions and therefore would likely be permissible under any regulations being considered by Government under this consultation. However, depending on the method used to create the hydrogen fuel, the well-to-wheel emissions of a hydrogen fuel cell electric vehicle could vary from being negligible to, according to some reports, being greater than its fossil-fuelled equivalent. The REA will be responding separately to the various consultations in support of hydrogen that were published over the summer.

The REA recommends that the UK Government carefully consider how renewable transport fuels can best be deployed to accelerate the decarbonisation of transport, whilst also avoiding the displacement of emissions from the tailpipe to the production of the fuel.

4. What would the impact be on different sectors of industry and society in setting an SZEC requirements, using evidence where possible?

In the broadest terms, the REA believes that imposing more stringent SZEC requirements will reduce vehicle miles driven using ICE powertrains and increase miles driven using battery-

electric powertrains. Over time, this will therefore reduce demand for petrol and diesel and increase demand for electricity and, likely to a lesser extent, hydrogen.

By increasing demand for electricity for transport, there will also be a greater requirement to grow the UK's electric vehicle charging infrastructure network, as well as the wider electricity network, to ensure that there is adequate capacity to meet increased demand. The REA anticipates that growth in demand for electricity for transport use will increase investment in the UK's EV charging infrastructure industry, creating jobs and adding value to the UK economy. The REA will be working with its members to try and quantify the potential wider economic benefit of such growth.

Possible Future Frameworks

5. Do you have any comments regarding Option 1, to replicate the current regulatory framework, albeit with strengthened targets, to meet our wider carbon reduction targets and phase out dates?

The REA believes that Option 1 would not reduce emissions from road transport with the urgency that is required to prevent a climate crisis.

Whilst we appreciate the advantages of implementing regulations using existing primary powers, we believe that strengthened CO2 emissions targets alone are not sufficient to achieve net zero emissions by 2050. This is primarily down to the long-term CO2 emissions contribution made by fossil-fuelled vehicles sold prior to 2030 and, to an extent, 2035.

Even with stringent CO2 emissions targets, automotive manufacturers would still be able to continue producing and selling petrol and diesel vehicles up to 2030. This could be done much as it is now: either by balancing their emissions against a smaller number of zero-emission or zero-emission capable vehicles or; potentially by trading emissions with automotive manufacturers that produce a larger number of zero-emission vehicles.

We are also concerned that Option 1 leaves room for automotive manufacturers to optimise their vehicles (particularly hybrid variants) to achieve desired CO2 emission results from the WLTP testing procedure. We are particularly weary of this risk owing to the actions of certain automotive manufacturers during the "Dieselgate" scandal, where defeat devices were installed into brand new vehicles in order to pass nitrogen dioxide emission limits imposed by the European Commission.

Regardless of the method, Option 1 would allow emissions-intensive petrol and diesel vehicles to continue to be sold up to 2030 and, based on the longevity of modern ICE vehicles, these vehicles may continue producing emissions beyond 2050. Data from SMMT shows that, on average, vehicles registered in the UK are 14 years old when scrapped.

Option 1 would also squander the significant and widespread benefits of implementing stronger regulations through a ZEV Mandate or sales target. These benefits are discussed in our response to question 6.

6. Do you have any comments regarding Option 2, to introduce a ZEV Mandate or sales target alongside a CO_2 regulation?

The REA strongly supports Option 2, and specifically the introduction of a ZEV Mandate covering new vehicle sales up to 2030 and 2035.

A significant benefit of implementing a ZEV Mandate is that it will provide greater confidence for investment in public EV charging infrastructure, as it removes a degree of uncertainty regarding future demand.

Stakeholders from the public and private sector have long endeavoured to provide adequate public charging infrastructure to support the transition to electric vehicles. To date, all such endeavours have been predicated on estimates and assumptions concerning future electric vehicle adoption. Despite these forecasts being fraught with uncertainty, they are crucial in two regards: 1) Understanding the quantity and specification of infrastructure required to meet future demand; and 2) Developing business cases for investment in EV charging infrastructure.

The REA considers that the present uncertainty around future EV adoption is one of the single greatest barriers to triggering intervention from the public sector (particularly local authorities) and unlocking investment from the private sector.

A ZEV Mandate will remove a considerable amount of uncertainty on the future uptake of EVs, allowing industry to produce more accurate long term business plans, thereby increasing investor confidence and attracting greater levels of investment across the industry. In the absence of an unprecedented injection of public funding, this private investment is crucial to enabling the UK to develop a fit-for-purpose EV charging infrastructure network.

By reducing uncertainty around the transition to EVs, we also believe that a ZEV Mandate will encourage meaningful action from local authorities; particularly those that are not yet engaged with the topic of EV charging infrastructure.

Equipped with a more certain EV adoption pathway, local authorities will not only have the confidence to act to facilitate the installation of EV charging infrastructure, but they will also have the information needed to better understand the amount of charging infrastructure required in their local area. Encouraging action from local authorities is particularly important to enable the installation of on-street residential charging infrastructure for use by residents who cannot access a private domestic chargepoint.

Another significant benefit of a ZEV Mandate is that there can be no ambiguity in the definition of a ZEV. The REA would suggest that any vehicle with a tailpipe should not be considered a ZEV and therefore not counted towards an automotive manufacturer's obligations under a ZEV Mandate. This removes the opportunity for automotive manufacturers to optimise their vehicles to meet requirements under regulations based on CO2 emissions.

The REA would not support including hybrid vehicles that possess "significant zero emission capability" within the ZEV Mandate. It should be clear that a zero emission vehicle must be truly zero emission; when measured from the tailpipe, as a minimum.

With regards to implementing strengthened CO2 regulations for vehicles that produce tailpipe emissions, The REA supports the increased use of renewable transport fuels to drive down net emissions from transport in the shortest time possible.

7. Do you have any views on the Government's initial preference for the regulatory approach set out in Option 2?

The REA fully supports the Government's initial preference.

8. Are there alternative approaches that could deliver on the government's carbon budget and 2030/2035 commitments?

No response.

9. Do you have any views on how either, or both, of the options could be implemented?

With regards to implementing a ZEV Mandate, it is important to set a transition that is realistic and deliverable, but also ambitious enough to meet the UK's legal obligation to achieve net zero carbon emissions by 2050. To ensure that this is the case, the ZEV Mandate transition should form the central component of a road transport decarbonisation delivery plan up to 2035, providing a long-term, carbon-costed roadmap. This delivery plan should provide detail on the roles, responsibilities and requirements of Government and industry to deliver mass decarbonisation of light road transport in the UK.

As part of the delivery plan, the Government should also produce an official forecast for UK EV adoption, using the pathway set by the ZEV Mandate combined with forecasts for new vehicles sales. Providing a single, centralised forecast will help to realise the benefits that a ZEV Mandate can have on providing greater confidence for public sector engagement and private sector investment.

10. Do you have any further comments or evidence which could inform the development of the new framework?

No response.

Additional Issues for Consideration

Stringency of CO_2 Target

11. If deploying a combined ZEV Mandate and CO2 regulatory framework, how should the CO2 element be set?

The REA supports the second scenario suggested in the Green Paper, suggesting that CO2 regulations continue to be strengthened for vehicles not covered by the ZEV Mandate. We believe that this will achieve the greatest CO2 emission reduction in the shortest time.

We also recognise that vehicles sold under any new regulations will likely remain active on UK roads for some time. Estimates from SMMT suggest that the average age of a vehicle at scrappage is around 14 years[1]. Ensuring that new vehicles adhere to strengthened CO2 emission standards can therefore have a long-lived positive impact over the lifespan of the vehicle.

[1] Average Vehicle Age - SMMT

12. Should the focus be on delivering the largest possible CO_2 savings, or the quickest possible switch to zero emission mobility?

The REA believes that the overriding ambition should be to reduce CO2 emissions as quickly as possible, as this is the ultimate driver behind the transition to zero emission vehicles. However we also believe that this should not be mutually exclusive from delivering the quickest switch to zero emission mobility. We believe that delivering the quickest transition to zero emission vehicles would also achieve the largest possible CO2 savings, based on the whole life emissions associated with ZEVs when compared against petrol and diesel vehicles.

13. How do we ensure that the target allows for sufficient supply of low and zero emission vehicles; supports investment in the UK; and delivers our carbon reduction commitments?

No response.

Derogations and Exemptions

14. Should the new regulatory framework include exemptions or modified targets for certain specialist vehicles and/or niche and small volume manufacturers?

The REA believes that exemptions should be made for certain specialist or niche vehicles. The reason for this is to ensure that the automotive sector can focus on decarbonising vehicle types that make a greater cumulative contribution to over UK carbon emissions.

For specialist or niche vehicles, we recommend that the UK Government continue to support and incentivise the use of renewable transport fuels. This will allow such vehicles to achieve a reduction in net carbon emissions without diverting investment away from decarbonising vehicles available to the mass-market.

Credit Levels

15. Should credits be awarded to vehicles that meet the SZEC definition?

Yes

Please explain your answer.

The REA considers it important that organisations that take the risk to go above and beyond their legal requirements under any new regulatory system are rewarded for taking such a risk. We believe that issuing such credits would be a sensible way of providing such reward.

16. If so, should this be a fixed number of credits, or should there be a sliding scale that recognises the difference in CO2 efficiency of various SZEC-compliant vehicles?

To ensure that any credits issues are measured directly against real-world CO2 emission reduction, we consider it is important that any credits scheme recognises both the zero-emission range and the overall CO2 emission efficiency of SZEC-compliant vehicles. Vehicles with greater zero-emission range and lower CO2 emissions should receive proportionally more credits than those with shorter zero-emission range and higher CO2 emissions.

Credit Banking and Trading

17. Should this be considered within the new framework?

Don't know

Please explain your answer.

The REA does not possess a detailed understanding of trading of credits in the automotive sector.

18. If so, over what timeframe should they remain usable and should credits and debits be treated the same or differently?

No response.

19. Within the trading element of the new scheme, should there be limits on the number of certificates/grams of CO_2 that can be bought or sold?

Don't know

Please explain your answer.

The REA does not possess a detailed understanding of trading of credits in the automotive sector.

20. Should such a market cover the whole of road transport or should there be some constraints imposed on trading across manufacturing sectors (e.g. cars and Heavy Duty Vehicles)?

No response.

Credit Banking and Trading

21. How, and at what level, should fines be set in the new UK regulatory framework and should this vary for different vehicle types?

No response.

Target setting process

In the future UK regulatory regime, we have the opportunity to determine how far ahead we set the targets, the lead in time for any change in targets and whether the option to amend targets at shorter notice is required. We would welcome views on each of these.

No response.

Real-World Emissions

22. Would there be benefits in seeking to ensure any CO2 targets in the new UK regulatory framework take into account real-world emissions data alongside the lab-tested WLTP CO_2 emissions figures? If so, how might the two be linked?

Don't know

Please explain your answer.

The REA does not possess detailed knowledge of vehicle testing.

Extending the Framework to all Road Vehicles

Heavy Duty Vehicles

23. For vehicle sub-categories that are not yet covered by VECTO, could a ZEV Mandate/sales target be extended before VECTO is adapted?

Don't know

Please explain your answer.

The REA does not possess detailed knowledge of VECTO.

24. Would there be any unintended consequences of establishing a ZEV Mandate for certain vehicle sub-categories before a CO_2-based regulation?

Careful consideration should be made as to whether ZEV technologies are a viable option for all HDV subcategories. If this is not the case, The REA believes that a ZEV Mandate would have little or no impact on reducing CO2 emissions. In such cases, The REA recommends that Government continues to incentivise the use of renewable transport fuels to achieve the greatest short-term reduction in net CO2 emissions possible.

25. Do you have any views on imposing a CO2 regulation on vehicle types that are not yet covered by a CO_2 test procedure, or existing regulation, particularly in light of the planned future phase out consultation for new non-zero emission buses?

Don't know

Please explain your answer.

The REA has no expertise of such regulations.

L-Category vehicles (Motorbikes, Mopeds, Quad Bikes etc)

26. Should the preferred regulatory approach be extended to all L-category vehicles or should the diversity of the sector (motorbikes, mopeds, motorised tricycles, quadbikes, motorised quadricycles etc) necessitate different approaches?

Yes

Please explain your answer.

The REA considers that L-category vehicles are ideal candidates for electrification, based on their suitability to urban driving conditions. Furthermore, zero-emission L-category vehicles represent a potential low-cost option for consumers to access the benefits of e-mobility – particularly in urban environments. The Citroen Ami is an example of an electric L-category vehicle (specifically a quadricycle) being offered at a highly competitive price. In Europe, the Citroen Ami is available for €19.99 a month (after deposit) and it is thought that this vehicle may be introduced to the UK market soon[2].

The REA is not in a position to comment on the readiness of L-category vehicle OEMs to achieve the same 2030 end of sale for new petrol & diesel vehicles as has been set for cars and light vans. We anticipate that the transition towards zero-emission L-category vehicles will be subject to further consultation.

[2] Citroen UK boss: 90% chance of imminent Ami UK launch | Autocar

Additional Issues for Consideration

As the regulations develop, all potential aspects listed in chapter 5 will need to be considered for each vehicle type. Therefore, we would welcome any additional views on the application of the variables mentioned from paragraph 5.50 onwards, in respect of new HDVs (including the adaptations that should be made for different HDV types) and L-category vehicles.

The larger size of HDVs means that battery electric HDVs will not be able to use the vast majority of the UK's existing public EV charging infrastructure network, which has predominantly been built to accommodate cars and small vans. Therefore, were the UK Government to impose a ZEV Mandate upon HDVs, The REA suggests that UK Government works alongside industry (including HDV manufacturers/operators, motorway service areas/truck stops and EV chargepoint manufacturers) to develop standards to inform the design of EV charging infrastructure solutions suitable for use by HDVs. See also our response to the recent consultation on setting a phase out date for sale of new, non-zero emission heavy goods vehicles.

Were UK Government to impose a ZEV Mandate on L-category vehicles, The REA would recommend that this is implemented alongside a new electric-specific standards for L-category vehicles to ensure that, where appropriate, these vehicles are compatible with the UK's existing network of public EV charging infrastructure.