Consultation on when to phase out the sale of new non-zero emission heavy goods vehicles

Introduction

Thank you for responding to our consultation on setting phase out dates for the sale of new non-zero emission HGVs.

The closing date for this consultation in 23:45 on is 3rd September 2021. Please send your completed response form to HGVconsultation@dft.gov.uk

Due to remote working, we strongly encourage responses by email. If you are unable to respond by email, we would invite you to please let us know by asking someone to email on your behalf.

If none of the above is possible, then we invite you to send written responses to:

HGV phase out date consultation
Great Minister House
33 Horseferry Road
London
SW1P 4DR

About this consultation

Background

Transport is the largest contributor to domestic UK greenhouse gas (GHG) emissions, accounting for 27% of emissions in 2019. Within transport, HGVs are second only to cars and vans in terms of total GHG emissions. The proposed phase out dates put forward in this consultation reflect what is needed for the UK's HGV fleet to deliver its contribution to net zero by 2050.

Consultation proposals

We are seeking views on the following proposed phase out dates for the sale of new non-zero emission HGVs:

- **2035** (or earlier if a faster transition seems feasible) for vehicles weighing from 3.5 tonnes up to and including 26 tonnes.
- **2040** (or earlier if a faster transition seems feasible) for vehicles weighing more than 26 tonnes.

We are also seeking views on:

- whether to extend these phase out dates to HGVs using low carbon fuels.
- whether the maximum permissible weights of zero emission or alternatively fuelled HGVs should increase to allow for their generally heavier powertrains. Weight limits would increase by the additional weight of the powertrain, up to a maximum of 1 tonne for alternatively fuelled HGVs and 2 tonnes for zero emissions HGVs.

Confidentiality and data protection

Department for Transport (DfT) is running this survey to assist with setting appropriate phase out dates for the sale of new, non-zero emission HGVs.

We are asking for:

- your name and email address, in case we need to ask you follow-up questions about your responses (you do not have to give us this personal information, but if you do provide it, we will use it only for the purpose of asking follow-up questions.)

- whether you are representing an organisation or yourself.

- if you are representing an organisation, the name of the organisation or business you represent and the type. Please note, sole traders are not required to provide this information.

Your consultation response and the processing of personal data that it entails is necessary for the exercise of our functions as a government department. Any information you provide that allows individual people to be identified, including yourself, will be protected by data protection law and DfT will be the controller for this information.

DfT's privacy policy (open in new window) has more information about your rights in relation to your personal data, how to complain and how to contact the Data Protection Officer.

Your information will be kept securely and destroyed within 12 months after the closing date.

Your details

Questions in this section provide us with important information on your relationship to the consultation, whether your interest is as a member of the public, an academic or as the representative of an organisation. Understanding this information allows us to understand how different sectors of society view our proposals.

1. Your and email address:

Name:	Paul Thompson
Email:	pthompson@r-e-a.net

2. Are you responding: *

	as an individual?
x	on behalf of an organisation?

Organisation details

3. Name of your organisation:

Please note sole traders are not required to provide this information.

Organisation name:	The Association for Renewable Energy & Clean Technology (REA)

3. Are you responding as:

Please note sole traders are not required to provide this information.

	a representative of a business or firm?
X	a representative for a trade body?
	a representative of an academic or research organisation?
	a representative of a local authority or other public body?
	from a community group?
	another organisation?

Consultation Questions

Please note none of the questions in this consultation are compulsory.

1. **Do you agree or disagree that introducing a phase out date for the sale of new non-zero emission HGVs will help us meet our legally binding net zero target?**

	Yes
	No
X	Don't know

Please explain your answer.

We strongly agree that prompt, co-ordinated action needs to be taken to reduce GHG emissions across the transport sector, including HGVs. We also agree that clear, high-level targets have a role to play in communicating government priorities to manufacturers, users and wider stakeholders.

We have responded 'don't know' to this question, for two principal reasons:

1) Lack of information on the alternatives to diesel HGVs proposed, how challenges to their deployment and use can be addressed and the affordability of measures to be taken.

2) The possible extension of the phase out to vehicles using high blends of low carbon fuels could discourage action in the next decade to reduce GHG emissions, meaning the overall impact of such targets could be detrimental to the UK's climate change commitments

On the first point, several challenges with implementation are set out in the consultation. Given the extremely limited availability and real-world use of the battery and hydrogen-powered vehicles preferred it is not clear that these can be addressed in the time available at an acceptable cost. If targets set by Government in relation to climate change are not seen as deliverable – or phase out dates are set and subsequently delayed - the credibility of the wider climate change agenda could be undermined.

On the second point, the focus on emissions at the tailpipe is misplaced, given the primary goal must be to reduce GHG emissions. So long as the electricity network has significant GHG emissions, these need to be considered. Similarly, the GHG consequences of the pathway used to produce hydrogen are critical, and we note this is a key consideration within the UK hydrogen strategy, published 17 August.

This assessment should preferably be done on a full lifecycle basis of the vehicle throughout its life, but as a minimum on a 'well to wheel' basis.

As well as the need to understand 'well to wheel' emissions of potential zero-emission technologies for HGVs, we also must endeavour to understand their embedded emissions. For certain technologies, the requirement for significant works to be undertaken to support their use will contribute emissions through activities such as roadworks and electricity network expansion. Such works would be required, for example, to implement a widespread network of catenary charging infrastructure for use by HGVs. At present, we do not consider there to be sufficient evidence to assess whether or not these embedded emissions are significant enough to outweigh the operational emissions reductions of zero-emission HGVs.

The IPCC's report on the physical science basis of climate change (published 9 August 2021) finds that 'unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5ºC or even 2ºC will be beyond reach'.

It is essential to maximise reductions in the next decade. In that sense, the net zero by 2050 target can be unhelpful if taken in isolation – not only because 2050 is too late, but because it is cumulative emissions to atmosphere that matter rather than the annual level of emissions as an end in itself.

We therefore need to ensure that our approach to reducing GHG emissions in the transport sector makes full use of technologies that are available now and in the near future – and that efforts to move to longer-term solutions do not undermine that. See also our response to Question 10.

We note that the Prime Minister's Ten Point Plan for a Green Industrial Revolution committed to 'launch a consultation on a date for phasing out the sale of new **diesel** heavy goods vehicles' and we agree that phasing out diesel should be the focus. Further comments on low carbon fuels are set out in our response to question 10.

Outcomes from this consultation need to be considered alongside the Green paper on a new road vehicle CO2 emissions regulatory framework for the UK, which we will be responding to separately.

2. Do you agree or disagree with our approach to split the phase out dates for new non-zero emission HGVs into two weight categories?

X	Yes
	No
	Don't know

Please explain your answer.

We agree that the approach should consider the HGV market in segments rather than as a single whole. Since the challenges for deployment and use are greater for heavier vehicles, the broad approach proposed seems reasonable. See also our response to Question 3.

3. Do you agree or disagree that 26 tonnes and under, and more than 26 tonnes are the right categories?

	Yes
	No
x	Don't know

What evidence do you have for or against?

We would defer to those with more detailed knowledge of the market. There may be a case for making a further distinction in the 26-tonnes and under category, as progress in vehicles at the lighter end may be easier to achieve (up to 18 tonnes or similar). There may also be a case for drawing distinctions between HGV types, such as rigid or articulated trucks.

Between 3.5 and 26 tonnes, the range of potential HGV shapes and sizes varies considerably. For example, this range encompasses vans, flatbed vehicles, rigid trucks and articulated trucks. The specific type of each HGV may impact its suitability for zero-emission vehicle technologies, but this is something that automotive organisations would be better placed to provide evidence on. The main challenge that the REA wishes to highlight is around battery electric HGV charging.

The variation of HGV shape and size will present a challenge for charging battery electric HGVs. For certain vehicles, such as vans, they may still be able to access much of the charging infrastructure that is made available to light vehicles. This inherently makes them more viable as a zero-emission alternative. The existing EV charging infrastructure network will not be able to accommodate larger HGVs – particularly articulated HGVs – meaning that new networks of HGV-ready EV charging infrastructure will need to be developed. In the absence of such a network existing, larger HGVs within the 3.5-26 tonne range will be significantly less appropriate for battery electric drivetrains.

These practical barriers to charging larger battery electric HGVs should be explored. If found to be significant, the Government should consider changing the existing categories or introducing additional ones to ensure that diesel HGVs with the greatest number of viable zero-emission alternatives are phased out soonest. Until this issue has been explored further, the REA is not in a position to support or oppose changing the categories that the Government has set out.

4. Do you agree or disagree with our proposal to end the sale of new non-zero emission HGVs, for vehicles weighing from 3.5 up to and including 26 tonnes, by 2035?

X	Yes
	No
	Don't know

What evidence do you have for or against?

Our agreement to this is on the basis that this ban only relates to diesel HGV rather than those using high blends of Low Carbon Fuels.

Before confirming phase out dates, the Government would need to be confident that the challenges identified to deployment and use can be dealt with in that time at an acceptable cost.

5. What do you consider the main challenges and barriers to meeting this target for HGVs 26 tonnes and under?

These will include availability and cost of vehicles and user acceptance – including the existence of a viable second-hand market – and charging infrastructure. Many of the issues highlighted in response to question 8 will also apply to some extent.

As discussed in our response to Question 3, the significant variation in shape and size of HGVs between 3.5 and 26 tonnes also impacts their ability to utilise certain types of electric vehicle charging infrastructure.

6. How can these barriers be addressed?

We do not see any of these barriers as insurmountable, but more analysis needs to be done before dates are confirmed.

The extent to which an HGV's type and size impacts its ability to utilise certain types of EV charging infrastructure should be investigated. If found to be a significant barrier, guidance should be developed to ensure that fit-for-purpose EV charging infrastructure is made available for HGVs of all types and sizes.

7. Do you agree or disagree with our proposal to end the sale of new non-zero emission HGVs, for vehicles weighing more than 26 tonnes, by 2040? What evidence do you have for or against?

	Yes
	No
x	Don't know

What evidence do you have for or against?

As set out in response to Question 1, we would broadly support this on the basis that the focus is on the phase out of diesel HGVs rather than excluding vehicles using high blends of Low Carbon Fuels that offer real GHG savings.

There is a large number of challenges identified to deployment and use of these vehicles, nor is it clear how they will be addressed – and in some cases it should not be taken for granted that they can be.

Part of the difficulty is that there are many possible technology pathways even within the Government's preferred approach, and as noted in paragraph 1.28 of the consultation, it may be that a mixture will be required rather than a single technology 'winner'. This makes communicating policy messages to all those involved in producing and using these vehicles and the associated infrastructure much harder.

It may be appropriate to set a phase out date for this sector for 2040 but further analysis would be needed on pathways, what practical barriers exist and what would be needed to overcome them – as well as costs and benefits. The latter should not be neglected, given that willingness to pay for climate change measures is not unlimited, and the government has rightly sought to focus on cost-effectiveness of climate change measures.

It is vital that Government climate change targets are ambitious and deliverable. Given the challenges identified and the uncertainties around proposed ways to address them, the Government should make further progress on this before committing to phase out dates.

Otherwise, there is a risk that targets are not seen as credible and are not acted upon by industry, resulting in the Government having to water down or delay those deadlines. As well as the missed opportunity to reduce GHG emissions in the HGV sector, confidence in the Government's wider climate change agenda would also be undermined.

8. What do you consider the main challenges and barriers to meeting this target for HGVs weighing more than 26 tonnes?

The most obvious challenge is the very limited **availability of cost-effective vehicles**, and the lack of experience of their use in the real-world in the UK. This is relatively easy to address through doing, although the rate at which technology development would need to occur seems very rapid when compared with timing expectations for phase out of fossil fuel powered cars and vans.

Most HGV users operate in a purely commercial market with tight margins, so there is less latitude than for cars to make purchasing decisions based on lifestyle preferences that do not also make commercial sense.

Issues around **charging** battery electric vehicles need further consideration. Development of a reliable, inter-operable and widespread charging network is a challenge for passenger vehicles, and this becomes much more difficult given the quantities of power needed for HGVs. Considerable grid reinforcement could be needed at Motorway Service Areas, as well as the other places used for rest stops by drivers – where facilities are often basic, at best. Even where charging is done at depots, this could still be a significant cost – and the picture is complicated because the operator of the site is unlikely to be its owner. Whatever approach is adopted will also need to work for the UK as a whole rather than just for the major cities.

With regard to hydrogen, these vehicles seem further away from the market than battery electric vehicles.

We have no specialist knowledge on the catenary systems considered, but it is difficult to see how these could be anything but a niche solution to the problem given the cost of infrastructure. We have yet to electrify large parts of the rail network, in part because outside of the busiest routes it has not been seen as cost-effective.

Whether or not catenary systems could be part of the solution, a phase out of diesel HGVs relies primarily on self-contained vehicles.

9. How can these barriers be addressed?

As set out elsewhere, more work needs to be done on practical solutions for UK deployment of these technologies before a phase out date can be set with confidence.

The technology winners for HGVs are unclear and given the range of duty cycles and specifications there may never be a single winner. UK HGVs are right hand drive and there are other aspects of the regulatory environment that differ from mainland Europe.

We need to be realistic on the limits of how influential UK policy will be in shaping the actions of HGV manufacturers. The UK buys 40-45,000 new HGVs per year and is one of only three new vehicle right hand drive markets globally (alongside Japan and Australia). By contrast, global truck sales excluding China are 1.7-2 million units. It is reasonable for the UK to seek to influence and co-ordinate action, but we need to be aware of the relative size of the UK market – OEMs will surely look first at markets such as the USA and mainland Europe before considering whether it is worth the additional time and effort to meet UK expectations.

This is a different situation compared to passenger vehicles. By the time phase out dates of conventional vehicles it was clear that battery electric vehicles would be the focus across the sector. The UK was therefore not trying to influence the technology choices of manufacturers. Instead, it was seeking to send a clear message to manufacturers that the UK was serious about EV deployment, so as to encourage these units to be delivered to the UK market.

10. Do you agree or disagree that these phase out dates should be extended to all non-zero emission HGVs, including those using low carbon fuels, in their respective weight categories?

	Yes
X	No
	Don't know

Please explain your answer.

As highlighted in our response to Question 1, there is a pressing need to maximise GHG reductions as early as possible. That means taking actions that will have effect over the next 10-15 years. It also requires policies that will only take effect in the longer term not to jeopardise those technologies that can and are making a difference now.

In the HGV sector, this means the urgent requirement is to phase out the use of conventional diesel fuel. There is likely to be a significant role for battery electric vehicles (BEV) and possibly also hydrogen vehicles. As things stand currently BEV are only just coming to market and there are very limited options at the heavier end of the scale. Even assuming all the challenges identified in this consultation are addressed in a practical and affordable way, their role over the next decade will be very limited.

In parallel with building this market, we need to ensure that the fuel used in HGVs is as low GHG emissions as possible. This is not to downplay the importance of protecting air quality. We have a current and historic problem with air quality from HGVs, but the roll out of Euro VII / SULEV standards will reduce the risk from this over the period considered to very low levels. On current and planned policies, climate change poses a far greater threat to our health and way of life.

As noted in the consultation, low carbon fuels are an important and readily available source for decarbonisation of the freight sector and will play an even greater role in future. Even once BEV and hydrogen vehicles envisaged are commercially viable and widely available, low carbon fuels twill remain vitally important.

Zemo Partnership has done significant work on the current market situation of these fuels in the freight sector and barriers to uptake. Many of these barriers are practical and around market perception of the vehicles and issues such as second-hand markets and warranties. Uncertainties around future direction of government policy also play a role.

The market for these fuels is growing and we need to maximise use of these fuels over the next years. In parallel, it is essential that overall government policy is set out clearly, so that operators have confidence in buying the vehicles and building the infrastructure to support this. As things stand, operators may well take away the understanding that there is no point using these fuels and they may as well continue to use conventional diesel until such time as the government's preferred technologies become available. In the worst case, they may continue with business as usual and simply buy a fleet of new diesel trucks in 2039. Some of our members have provided us with feedback that this sort of response is already being seen.

Since the RTFO renewable fuels targets are set with reference to total fossil fuel supplied, it follows that higher use of EVs (and therefore reduced total fuel demand) would lead to lower absolute levels of renewable fuels supplied. Given the urgent nature of the climate emergency, we need successful deployment of all the GHG

reduction technologies available to us. Greater-than-anticipated success in EV uptake should not result in a reduction of GHG savings from low carbon fuels.

Given the above, we propose that whatever phase out dates are chosen for new diesel HGVs should not apply to:

1. Vehicles that are supplied to run on high blends of renewable liquid fuels (excluding 'drop-in' fuels)
2. Vehicles powered by methane

High blends of diesel-type renewable fuels

Fuels such as biodiesel can be used in blends up to 7% within current fuel standards. This is supported under the RTFO.

For the last full year for which confirmed figures are available (2019). The total GHG savings in 2019 from the RTFO are 5,368kt CO2eq, representing a GHG saving of 83% compared to fossil fuel.[1] Within this, biodiesel made up 6.3% of diesel supplied, of which 79% was produced from Used Cooking Oil.

In its package of measures published in July 2021, the European Commission proposed increasing the standard blend for biodiesel to up to 10%. This would suggest a high level of compatibility with vehicles on the road in the EU and that a similar option is likely to be available to the UK in the next few years. The UK is introducing a similar approach for petrol fuels, with a blend of up to 10% ethanol in petrol being the standard from 1 September 2021.[2]

As things stand, use of renewable fuels is within, but close to the limit allowed for in standard fuels. To date, RTFO targets have been limited by other factors than blend limits, in particular views on the amount of feedstock that is available sustainably.

As use of EVs increases over the next decade, this will lead to a corresponding decline in total fuel demand. Deploying the same amount of renewable fuel would therefore require it to be used in higher blends than that allowed for by the general technical standards.

This is where biodiesel fuels used in high blends in HGVs can have a very strong role to play. Although use of renewable fuels in aviation has rightly been identified as a priority, we would note that many biodiesels may not be suitable for these applications – either because of technical/cost limits of producing a fuel of the required quality or because policy may choose to prioritise other feedstocks and production pathways. If so, these biodiesels should be used to produce immediate and cost-effective GHG reductions in the HGV sector.

There is a role for diesels from renewable sources that are chemically identical to conventional diesel and therefore do not fall within blending limits. Given their

[1] See RTFO 2019 statistics, tables RF-0101 and RF-0114. GHG figures given exclude indirect land use change impacts. The equivalent figures including estimated indirect land use change impacts are 4,892 ktCO2 and 77% GHG saving

[2] This date applies to GB. Northern Ireland is expected to follow suit in the near future

nature, for the purposes of this consultation they cannot be taken into account when setting diesel HGV phase-out dates as the vehicles using them would be identical to those using conventional diesel.

Biomethane

Biomethane is increasingly used as a vehicle fuel. Changes must be made to the engine and other parts of the vehicle, but these are now available commercially at similar prices to diesel – the result of many years consistent development from manufacturers. Similarly, the network of fuelling stations has been growing, with further substantial investment planned. Analysis by the Gas Vehicle Network shows that use of gas as a transport fuel increased 78% in 2020.

Biomethane offers high GHG savings when made from manures, slurries and other wastes and there is the potential to deliver negative emissions cost-effectively if combined with carbon capture and storage. Use of biomethane is relatively straightforward as the gas is injected into the network at the point of production and can be taken out at the point of use, with the RTFO providing assurance on sustainability.

Although fossil gas could be used as a result, the RTFO provides a strong incentive to use biomethane. The same analysis referred to above calculated that the share of biomethane within the gas used in transport was 93%. We expect UK supply of biomethane to increase further over the next few years, due to new policies such as the Green Gas Support Scheme and new rules to facilitate smooth interaction between the Renewable Heat Incentive and the RTFO.

Next steps for low carbon fuels in HGVs

We note the comments on the role of low carbon fuels in this consultation and also the section on fuels in Transport Decarbonisation Plan. In particular, the intention to develop a strategy for low carbon fuels.

We will be working closely with the Department for Transport on this to ensure it produces integrated policy that aligns the work being done on both electrification and fuels to maximise GHG savings over the next 10-15 years. A clear pathway is essential if all participants are to make the changes needed in both the short/medium term as well as preparing for the longer term.

With a clear, co-ordinated approach, there are a number of ways in which the RTFO could be developed further to support decarbonisation of HGVs. These could include:

- Setting more ambitious targets 2022-2032 and targets beyond that point
- Ensuring that drop-in fuels are supported in addition to biodiesel so that remaining conventional diesel engines are able to use as high a proportion of low carbon fuel as possible. Drop-in fuels are currently supported within the RTFO ‘development fuels’ sub-target, so this is primarily a matter of ensuring that barriers to this use are addressed and the sub-target remains set at an appropriate level

- For biomethane, continued commitment to the fuel duty differential remains important. We welcome the reference to this in the Transport Decarbonisation Plan and the commitment to maintain it until 2032 (subject to review in 2024).
- Additional market-confidence building measures, as identified in the Zemo report referred to above
- As part of a much wider discussion on taxation of transport as the vehicle parc changes, the Government could consider a similar approach to that proposed by the European Commission for revisions to the Energy Taxation Directive, whereby energy taxes are banded based on GHG and wider environmental impacts

11. Do you agree or disagree that maximum permissible weights for certain zero emission vehicles (mainly HGVs) on both international and domestic journeys should increase by up to 2 tonnes (without exceeding 44 tonnes)?

	Yes
	No
x	Don't know

Please explain your answer.

We believe that such a measure would be appropriate for battery electric HGVs, as the battery electric drivetrain adds significant weight to a vehicle and therefore reduces vehicle payload. This potentially impacts the commercial viability of battery electric HGVs. However, the REA does not have the specific knowledge to confidently support or oppose this measure. The decision on whether weight restrictions should be eased for zero-emission HGVs is one that should be based on insight and evidence provided by the automotive sector and HGV fleet operators.

12. Do you agree or disagree that weight limits should increase by up to a maximum of 1 tonne for certain alternatively fuelled HGVs on both international and domestic journeys (without exceeding 44 tonnes)?

	Yes
	No
X	Don't know

Please explain your answer.

The REA does not have the specific knowledge to confidently support or oppose this measure. The decision on whether weight restrictions should be eased for zero-emission HGVs is one that should be based on insight and evidence provided by the automotive sector and HGV fleet operators.

13. Do you agree or disagree that weight limit increases should only offset any additional weight due to the alternatively fuelled or zero emissions technology?

	Yes
	No
X	Don't know

Please explain your answer.

See response to Question 11.

Final comments

Do you have any other comments?

No.