

Closed call for evidence

Infrastructure for zero emission heavy goods vehicles and coaches

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This publication is available at <https://www.gov.uk/government/calls-for-evidence/infrastructure-for-zero-emission-heavy-goods-vehicles-and-coaches/infrastructure-for-zero-emission-heavy-goods-vehicles-and-coaches>

This call for evidence seeks information about:

- the current and future supply, uptake and use of zero emission heavy goods vehicles (HGVs) and coaches across the UK
- their refuelling and recharging requirements

The responses will inform the development of an infrastructure strategy.

Policy background

The freight and logistics sector is truly multimodal, using a global network of road, rail, air and maritime routes to service supply chains flowing in to, out of and all across the UK. Most of the freight moved around the UK is carried on trucks – around 80% of the 200 billion tonne kilometres in 2022. This produced 20% of all the UK's domestic transport greenhouse gas emissions in 2021.

See these pages for the statistical background:

- [Final UK greenhouse gas emissions national statistics 1990 to 2021](https://www.gov.uk/government/statistical-data-sets/tsgb04-freight)
(<https://www.gov.uk/government/statistical-data-sets/tsgb04-freight>)
- [Department for Transport \(2023\) Road Freight Statistics Table 0101](https://www.gov.uk/government/statistical-data-sets/rfs01-goods-lifted-and-distance-hauled)
(<https://www.gov.uk/government/statistical-data-sets/rfs01-goods-lifted-and-distance-hauled>)
- [Department for Transport \(2023\) PORT0701](https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port)
(<https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port>)
- [Office for Rail and Road \(2023\) Table 1310 - Freight moved by commodity](https://dataportal.orr.gov.uk/statistics/usage/freight-rail-usage-and-performance/table-1310-freight-moved-by-commodity/)
(<https://dataportal.orr.gov.uk/statistics/usage/freight-rail-usage-and-performance/table-1310-freight-moved-by-commodity/>)

The transition to zero emission commercial vehicles is well underway in the smaller weight categories. Here, battery electric is crossing over from cars and light vans to becoming the early dominant technology for lighter HGVs operating in the urban distribution market and for operations which have a duty cycle that brings them back to base every day.

Many manufacturers are also putting this technology to use in the largest trucks. However, batteries may not be the answer for all cases, especially in the larger weight classes. Manufacturers are bringing hydrogen fuel cell HGVs to the market, which could offer a longer range between refuelling than most battery electric HGVs today and an experience most similar to that of diesel, but with a greater range of models available and battery technology continuing to improve, adoption could grow rapidly.

The preferred technology for specific cases will vary on factors such as vehicle operating weight, drive cycle diversity and maximum journey lengths. Although there is still some way to go before battery or hydrogen fuel cell HGVs can deliver the practicality of a diesel HGV in every case, the availability of zero exhaust emission HGVs is growing with a variety of vehicles up to 44 tonnes available today.

In November 2021, the government confirmed its [intention to end the sale of new non-zero emission HGVs](https://www.gov.uk/government/consultations/heavy-goods-vehicles-ending-the-sale-of-new-non-zero-emission-models/outcome/outcome-and-response-to-the-consultation-on-when-to-phase-out-the-sale-of-new-non-zero-emission-hgvs) (https://www.gov.uk/government/consultations/heavy-goods-vehicles-ending-the-sale-of-new-non-zero-emission-models/outcome/outcome-and-response-to-the-consultation-on-when-to-phase-out-the-sale-of-new-non-zero-emission-hgvs) weighing under or equal to 26 tonnes by 2035, with all new HGVs sold to be fully zero emission at the exhaust by 2040. Last year's [Future of Freight: a long-term plan](https://www.gov.uk/government/publications/future-of-freight-plan) (https://www.gov.uk/government/publications/future-of-freight-plan) confirmed the government would develop a plan for zero emission HGV infrastructure rollout and this call for evidence is part of the work being completed to deliver it.

It complements extensive engagement with industry on this topic in recent months, including the government's Freight Council and establishing the Freight Energy Forum, and important position papers from industry representatives, including the SMMT's '[Charging and Refuelling Requirements of the Heavy Goods Vehicle Sector](https://www.smmt.co.uk/wp-content/uploads/sites/2/SMMT-Position-Paper-Charging-and-Refuelling-Requirements-for-the-Heavy-Goods-Vehicle-Sector.pdf)' (https://www.smmt.co.uk/wp-content/uploads/sites/2/SMMT-Position-Paper-Charging-and-Refuelling-Requirements-for-the-Heavy-Goods-Vehicle-Sector.pdf) and Logistics UK's '[Electric Vehicle Report 2023](http://www.logistics.org.uk/research-hub/reports/ev-report)' (http://www.logistics.org.uk/research-hub/reports/ev-report).

We are developing a zero emission HGV and coach infrastructure strategy for publication in 2024. The strategy will set strategic direction and outline the respective roles and responsibilities of both government and industry to ensure the delivery of the refuelling and recharging infrastructure required to meet the end of sale dates for new non-zero emission HGVs.

This strategy will complement, and be supported by, the work of the [Freight Energy Forum](https://www.gov.uk/government/groups/freight-energy-forum) (https://www.gov.uk/government/groups/freight-energy-forum), where government and the freight and energy sectors will undertake work through to spring 2024 to better understand future energy demand across the wider freight sector and the barriers to investment in zero emission energy infrastructure.

The Freight Energy Forum is the group tasked with delivering our ambitions for the freight sector's transition to net zero by 2050 as set out in the Future of Freight plan.

The coach sector faces similar technical decarbonisation challenges to the road freight sector, given the similarities in vehicle size, weight and journey distance, and the diversity of business models to be considered in both sectors. It will therefore be important to ensure strategic alignment in zero emission vehicle infrastructure planning for both sectors.

Today, most domestic freight is moved by vehicles on our roads. In 2022, [1.64 billion tonnes of goods were transported by HGVs within the UK](https://www.gov.uk/government/statistics/domestic-road-freight-statistics-july-2021-to-june-2022/domestic-road-freight-statistics-july-2021-to-june-2022) (<https://www.gov.uk/government/statistics/domestic-road-freight-statistics-july-2021-to-june-2022/domestic-road-freight-statistics-july-2021-to-june-2022>). This involved approximately 156 million HGV journeys, of which only 6.0 million journeys (4%) also involved another type of freight transport such as sea, rail or air. In 2020, the road freight sector was made up of an [estimated 61,300 enterprises and contributed approximately £13.5 billion to the UK economy](https://www.gov.uk/government/statistics/domestic-road-freight-statistics-july-2021-to-june-2022/domestic-road-freight-statistics-july-2021-to-june-2022#overview-of-the-road-freight-sector) (<https://www.gov.uk/government/statistics/domestic-road-freight-statistics-july-2021-to-june-2022/domestic-road-freight-statistics-july-2021-to-june-2022#overview-of-the-road-freight-sector>).

Zero emission heavy goods vehicles

Heavy goods vehicles (HGVs) (any truck with a gross mass of over 3.5t) [contributed 20% of all domestic transport CO2 emissions in the UK in 2021](https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2021) (<https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2021>). The road-based freight and logistics sectors therefore have a critical role to play in achieving our 2050 net zero emissions target. But, decarbonising the movement of freight by road is challenging due to the large weight of HGVs and their cargo, and the long-distance journeys often needed.

The road freight sector is diverse, with a range of daily HGV drive cycles, use-cases and refuelling patterns. Vehicles are purchased to provide specific services and need to be efficient, reliable, and competitive on a total cost of ownership basis to fulfil their commercial function. HGVs travel longer distances, carry heavier loads and are utilised more intensively than passenger vehicles.

While the development and deployment of clean vehicle technologies and supporting infrastructure is required, this must be underpinned by a new understanding of how commercial vehicle movements and journey patterns could change with zero emission technologies. This could have benefits in terms of increased efficiency, and there might also be wider synergies with the new infrastructure likely required to decarbonise other forms of transport and their hubs, such as ports, ships and planes.

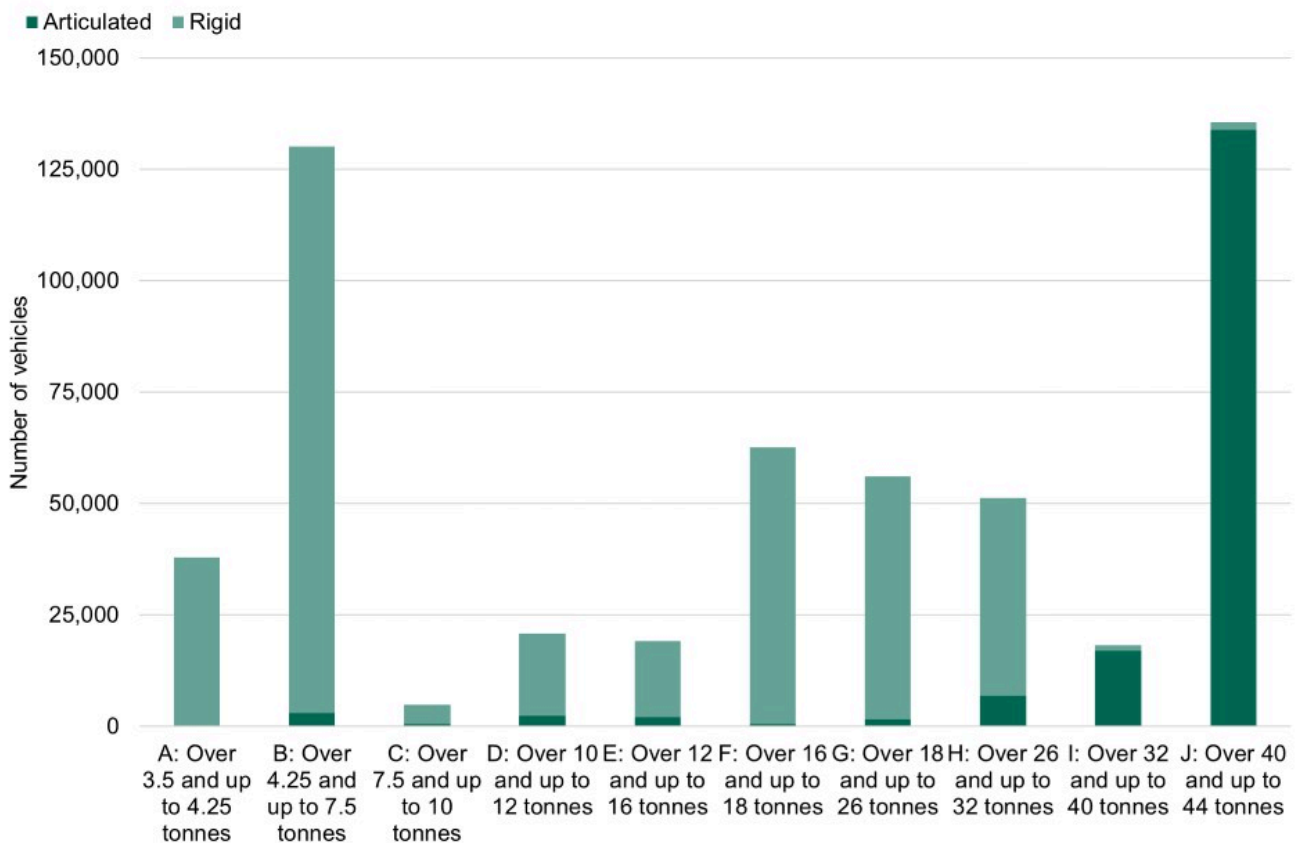
At the end of December 2022 there were 537,000 licensed HGVs operating on UK roads.

Figure 1 shows the wide variety of weight classes within the HGV fleet, with [higher weight classes tending to be articulated vehicles, and lower weight classes tending to be rigid vehicles](https://www.gov.uk/government/statistics/vehicle-licensing-statistics-2022) (<https://www.gov.uk/government/statistics/vehicle-licensing-statistics-2022>).

Approximately 70% of the fleet is made up of rigid HGVs, with the remaining 30% comprised of articulated HGVs. Articulated HGVs tend to do the longest journeys, [with an average length of haul that is over double the average length of haul of rigid vehicles \(https://www.gov.uk/government/statistical-data-sets/rfs01-goods-lifted-and-distance-hauled\)](https://www.gov.uk/government/statistical-data-sets/rfs01-goods-lifted-and-distance-hauled).

Figure 1: Licensed HGVs operating in the United Kingdom at the end of December 2022

Vehicles permitted to operate with abnormal loads have been excluded.



Zero emission coaches

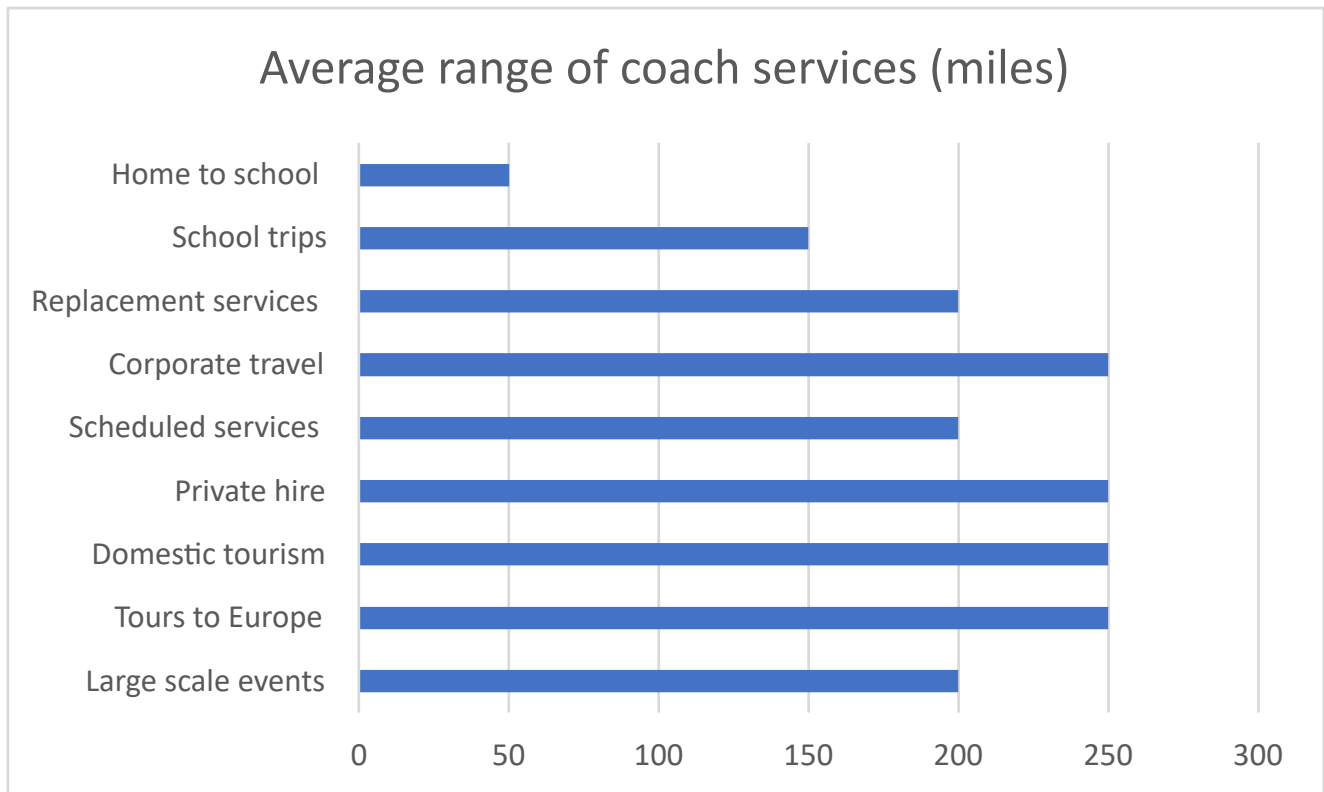
There are around 27,500 coaches in service in the UK and, [combined with buses, they contributed 3% of all domestic transport CO2 emissions in the UK \(https://www.gov.uk/government/publications/bus-back-better\)](https://www.gov.uk/government/publications/bus-back-better). Last year, we held a call for evidence to gather initial views on the challenges and opportunities arising from the transition to zero emission coaches. We will provide an update on this in due course.

We welcome the ambition of and progress being made by the coach industry in what is already one of the greenest modes of travel available. The graph below, utilising statistics provided by the Confederation of Passenger Transport, shows

the diversity of services provided by the coach industry and the average length of those journeys.

Figure 2: Average range of coach services in miles

Based on data from the [Confederation of Passenger Transport \(2022\) What are the challenges of transitioning to a zero emission coach fleet](https://www.cpt-uk.org/media/jmrhe0sj/zero-emission-coach-taskforce-phase-one-report.pdf) (<https://www.cpt-uk.org/media/jmrhe0sj/zero-emission-coach-taskforce-phase-one-report.pdf>).



There is a limited range of zero emission coaches currently available on the market, and their capabilities do not meet all existing use-cases, though we expect more models to come to the market. As with cars and buses, zero emission technology is developing rapidly in the coach sector, and as manufacturers gain more experience in vehicle design and reducing their cost, users can expect much greater range and improved performance.

There are a relatively small number of zero emission coaches currently in operation in the UK. This means there is uncertainty about the need for and optimum locations of recharging and refuelling infrastructure, including in depots and en-route, potentially in public locations.

We recognise that the coach industry faces different decarbonisation challenges from those of the HGV sector, however we want to understand if there are any opportunities for strategic alignment of the infrastructure to support both sectors in their transition to zero emission.

Aims of this call for evidence

This call for evidence seeks views from persons or organisations with an interest in the manufacture or use of zero emission HGVs and coaches, and their associated infrastructure.

The aims are to gather evidence:

- to support the development of a zero emission HGV and coach infrastructure strategy for the UK
- regarding the zero emission HGV and coach markets in the UK, including its infrastructure, both public and private (for example, depot-based)
- to inform future decision-making about zero emission HGVs and coaches

Policy scope and definitions

A zero emission vehicle is a vehicle that does not produce harmful exhaust emissions, such as greenhouse gas and pollutant emissions. Exhaust emissions that do not damage public health, such as water vapour, are permitted.

UK government policy on the transition to zero emissions is technology neutral. Both battery electric and hydrogen fuel cell, as zero emission technologies, will have a role in the decarbonisation of the HGV and coach sectors.

For the purposes of this call for evidence, an HGV refers to Class III vehicles, belonging to vehicle categories N2 and N3, as defined in [Article 4 of Regulation \(EU\) 2018/858](https://www.vehicle-certification-agency.gov.uk/vehicle-type-approval/what-is-vehicle-type-approval/type-approval-category-definitions/#topic-title) (<https://www.vehicle-certification-agency.gov.uk/vehicle-type-approval/what-is-vehicle-type-approval/type-approval-category-definitions/#topic-title>), as that regulation has effect in domestic law, or, as the case may be, as it has effect in EU law from time to time and by virtue of the Windsor Framework.

For the purposes of this call for evidence, a coach refers to Class III vehicles, belonging to vehicle categories M2 and M3, as defined in [Article 4 of Regulation \(EU\) 2018/858](https://www.vehicle-certification-agency.gov.uk/vehicle-type-approval/what-is-vehicle-type-approval/type-approval-category-definitions/#topic-title) (<https://www.vehicle-certification-agency.gov.uk/vehicle-type-approval/what-is-vehicle-type-approval/type-approval-category-definitions/#topic-title>), as that regulation has effect in domestic law, or, as the case may be, as it has effect in EU law from time to time and by virtue of the Windsor Framework.

This call for evidence seeks to gather evidence regarding zero emission HGVs and coaches, and their infrastructure, in the United Kingdom.

How to respond

This call for evidence began on 19 October and will run until 23:59 on 14 December 2023.

The easiest way to respond is via the online questionnaire. You can find a link to the questionnaire in the [Ways to respond section of the GOV.UK home page for this consultation \(https://www.gov.uk/government/calls-for-evidence/infrastructure-for-zero-emission-heavy-goods-vehicles-and-coaches\)](https://www.gov.uk/government/calls-for-evidence/infrastructure-for-zero-emission-heavy-goods-vehicles-and-coaches).

If you can't respond online, there is also a downloadable form plus an email and postal address.

You can email your response to HGVConsultation@dft.gov.uk or you can send your response to:

Zero Emission HGV Infrastructure Team
Great Minister House
33 Horseferry Road
London
SW1P 4DR

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

Next steps

This call for evidence closes on 14 December 2023. We will publish a summary of responses and a government response in due course.

The information gathered via this this call for evidence will be used, along with other evidence gathered, to inform the development of a zero emission HGV and coach infrastructure strategy, which we aim to publish in 2024.

Enquiries

Please send any enquiries about this consultation to:
HGVConsultation@dft.gov.uk

Full list of questions

These questions are listed here to give you an overview of what we are asking.

See the [Ways to respond section of the GOV.UK home page for this consultation \(https://www.gov.uk/government/calls-for-evidence/infrastructure-for-zero-emission-heavy-goods-vehicles-and-coaches\)](https://www.gov.uk/government/calls-for-evidence/infrastructure-for-zero-emission-heavy-goods-vehicles-and-coaches) for an online response form and other ways to respond.

What we are asking for

There are increasing numbers of new zero emission HGVs on UK roads, including many built here in the UK.

We, in the Department for Transport, are looking to better understand national infrastructure requirements for zero emission HGVs to inform the development of an infrastructure strategy.

There is a limited range of zero emission coaches currently available on the market, and their capabilities do not meet all existing use cases, though we expect more models to come to the market.

It is likely that the technical requirements for recharging and refuelling coaches will be similar to those for HGVs. There will, however, be passenger needs and safety considerations for coaches that do not apply to HGVs. We want to understand if there are any opportunities for strategic alignment of the infrastructure to support both sectors in their transition to zero emission.

To support the development of this strategy, we are inviting views on:

- the current zero emission HGV and coach markets
- transitional technologies for the HGV sector
- zero emission HGV and coach refuelling and recharging

1. What is your name and email address?

2. Are you responding on behalf of an organisation?

3. If you are responding on behalf of an organisation, what is the name of the organisation?

4. If you are responding on behalf of an organisation, where is it based?

- the United Kingdom
- the European Union

- the [European Free Trade Association \(https://www.efta.int/\)](https://www.efta.int/)
- other location

5. Which best describes your organisation type?

- freight transport trade association
- coach industry trade association
- other trade association
- road freight operator
- cross-modal freight operator
- non-road modal freight operator
- third-party logistic provider
- fourth-party logistic provider
- coach operator
- vehicle manufacturer
- local government body
- regional government body
- research body
- academic body
- another type of organisation

6. How many employees are in your organisation?

- 1 to 9 employees
- 10 to 49 employees
- 50 to 249 employees
- 250 to 499 employees
- 500 to 1,000 employees
- above 1,000 employees

Current zero emission HGV market

The freight and logistics sector will continue to play an important role for the UK economy, which depends on road haulage to move goods and to facilitate imports and exports.

In 2020, the road freight sector contributed [£13.5 billion to the UK economy with 61,303 enterprises \(https://www.gov.uk/government/statistics/domestic-road-freight-statistics-july-2021-to-june-2022/domestic-road-freight-statistics-july-2021-to-june-2022#headline-figures\)](https://www.gov.uk/government/statistics/domestic-road-freight-statistics-july-2021-to-june-2022/domestic-road-freight-statistics-july-2021-to-june-2022#headline-figures). It is therefore important that the sector is supported throughout the transition to zero emission.

The [Zero emission HGV and infrastructure demonstrator projects \(https://apply-for-innovation-funding.service.gov.uk/competition/1239/overview/a3dde705-ea27-43be-](https://apply-for-innovation-funding.service.gov.uk/competition/1239/overview/a3dde705-ea27-43be-)

[963f-c6b0012d554c](#)) will deploy zero emission HGV technologies and infrastructure at scale on UK roads to identify how they can best be used to decarbonise the heaviest HGVs. Successful projects using battery electric and hydrogen fuel cell HGVs were announced in October 2023. These projects will collect data to enable informed long-term, national infrastructure decisions to be made to bring forward the decarbonisation of the road freight sector.

The announced phase out dates for [non-zero emission HGVs requires all new HGVs sold to be fully zero emission at the exhaust](#) (<https://www.gov.uk/government/consultations/heavy-goods-vehicles-ending-the-sale-of-new-non-zero-emission-models/outcome/outcome-and-response-to-the-consultation-on-when-to-phase-out-the-sale-of-new-non-zero-emission-hgvs>).

UK government policy on the transition to zero emissions is technology neutral, allowing the markets to dictate the best solutions for zero emission road freight. Both battery electric and hydrogen fuel cell, as zero exhaust emission technologies, will have a role in the decarbonisation of the HGV sector.

The zero emission HGV and coach infrastructure strategy, due for publication in 2024, will include use-cases for both battery electric and hydrogen fuel cell technologies and will be informed by the responses to this call for evidence.

Given current trajectories for development of both technologies, and feedback from across the sector, we expect that battery electric HGVs will be capable of meeting the needs of the majority of use-cases by the 2035 and 2040 phase out dates, and likely much sooner. We expect that hydrogen fuel cell HGVs will likely play an important role in decarbonising those harder-to-decarbonise applications, for example where vehicles need longer ranges or rapid refuelling capabilities.

7. Based on your knowledge and understanding of HGVs and road freight operations, what vehicle capabilities will be needed for zero emission HGVs to meet existing and future business needs?

8. Do you currently operate an HGV fleet?

9. (HGV operators only) What is the size of your HGV fleet?

- 1 to 4 HGVs
- 5 to 9 HGVs
- 10 to 24 HGVs
- 25 to 50 HGVs
- more than 50 HGVs

10. (HGV operators only) Which zero emission technologies have you considered for decarbonising your HGV fleet and what is your assessment of them?

11. (HGV operators only) Which zero emission technology option do you think will work best for your business and why?
12. What is needed from infrastructure across the UK to support the adoption of zero emission HGVs in the UK, in and out of mainland Europe and Ireland?
13. Who should provide this infrastructure?
14. What implications do you foresee the transition to zero emission HGVs having on existing HGV operations?
15. What behavioural changes might be needed to accommodate the transition to zero emissions?

Transitional technologies

We have confirmed our [intention to end the sale of new, non-zero emission HGVs less than or equal to 26 tonnes from 2035](https://www.gov.uk/government/consultations/heavy-goods-vehicles-ending-the-sale-of-new-non-zero-emission-models/outcome/outcome-and-response-to-the-consultation-on-when-to-phase-out-the-sale-of-new-non-zero-emission-hgvs) (<https://www.gov.uk/government/consultations/heavy-goods-vehicles-ending-the-sale-of-new-non-zero-emission-models/outcome/outcome-and-response-to-the-consultation-on-when-to-phase-out-the-sale-of-new-non-zero-emission-hgvs>), and that from 2040 all new HGVs must be fully zero emission at the exhaust.

During the transition to zero emission, low carbon fuels have a significant role to play to help reduce carbon emissions from existing vehicles. Low carbon fuels currently provide a third of greenhouse gas savings in the domestic transport sector.

In line with [Climate Change Committee advice](https://www.theccc.org.uk/publication/biomass-in-a-low-carbon-economy/) (<https://www.theccc.org.uk/publication/biomass-in-a-low-carbon-economy/>), we believe that in the long term, low carbon fuel use should be focused in sectors that are harder to decarbonise, such as aviation and shipping.

In the short to medium term, as zero emission technologies are gaining momentum, transitional technologies, such as low carbon fuels, will continue to generate carbon savings in the existing road fleet.

We will soon be publishing a low carbon fuel strategy setting out a vision for the deployment of low carbon fuels across transport modes up to 2050. Use of these transitional technologies will also have implications for infrastructure. Potential synergies with both existing and new-built refuelling and recharging infrastructure may need to be considered. Currently, low carbon fuels, mainly biofuels blended into standard blends, typically make use of existing fuels infrastructure. However, new type of fuels, including higher biocontent fuels, may also require dedicated infrastructure.

16. What role will transitional technologies (such as low carbon fuels, plug-in hybrid vehicles, hydrogen combustion) play as the UK's fleet shifts to fully zero emission HGVs?

Zero emission HGV refuelling and recharging

HGV recharging and refuelling infrastructure is vital for a successful transition. This is why we are convening stakeholders to develop a zero emission HGV and coach infrastructure strategy, which will set out the respective roles and responsibilities of both government and industry.

There have been various estimates about the level of recharging and refuelling infrastructure needed at different locations.

17. Based on your knowledge of current operations, what proportion of zero emission HGV hydrogen refuelling do you estimate will take place at the following locations, and why?

- a. depots
- b. destinations (for example, warehouses, distribution centres)
- c. public locations (for example, motorway service areas, trunk road (A-road) service areas, truck stops)
- d. transport hubs (for example, ports, airports, rail freight terminals)
- e. other locations (please specify)

18. Based on your knowledge of current operations, what proportion of zero emission HGV recharging do you estimate will take place at the following locations, and why (add detail, where available, on the expected power requirement for charge points at each location)?

- a. depots
- b. destinations (for example, warehouses, distribution centres)
- c. public locations (for example, motorway service areas, trunk road (A-road) service areas, truck stops)
- d. transport hubs (for example, ports, airports, rail freight terminals)
- e. other locations (please specify)

19. What do you consider to be the barriers to installing and accessing hydrogen refuelling infrastructure for zero emission HGVs at the following locations (be clear if you are referring specifically to barriers in rural or urban locations)?

- a. depots
- b. destinations (for example, warehouses, distribution centres)
- c. public locations (for example, motorway service areas, trunk road (A-road) service areas, truck stops)
- d. transport hubs (for example, ports, airports, rail freight terminals)
- e. other locations (please specify)

20. What do you consider to be the barriers to installing and accessing recharging infrastructure for zero emission HGVs at the following locations (be clear if you are referring specifically to barriers in rural or urban locations)?

- a. depots
- b. destinations (for example, warehouses, distribution centres)
- c. public locations (for example, motorway service areas, trunk road (A-road) service areas, truck stops)
- d. transport hubs (for example, ports, airports, rail freight terminals)
- e. other locations (please specify)

21. Do you think that members of the HGV sector could benefit from working together to support their transition to zero emission, particularly in terms of infrastructure?

22. How do you think that members of the HGV sector could benefit from working together to support their transition to zero emission, particularly in terms of infrastructure?

Coaches

Coaches face similar decarbonisation challenges to HGVs.

They play an important role in supporting the UK's tourism industry, with Confederation of Passenger Transport research finding that 23 million visits to tourist attractions and locations were made by coach in 2019, contributing £14 billion to the UK economy.

While it is recognised that for longer distance travel, coaches offer a greener alternative to private cars, there are only a handful of zero emission coaches currently in operation in the UK.

There is a limited range of battery electric zero emission coaches currently available on the market, and at present their capabilities may not meet all existing use -cases. However, we expect that over the next few years battery electric coach capability will develop to be able to suit the majority of coach applications. We also expect there to be significant advances in hydrogen fuel cell technology. For example, [Wrightbus has been awarded up to £534,000 of government funding \(https://www.apcuk.co.uk/green-flag-for-fast-start-vehicle-demonstrators/\)](https://www.apcuk.co.uk/green-flag-for-fast-start-vehicle-demonstrators/) via the [Advanced Propulsion Centre \(APC\) \(https://www.apcuk.co.uk/\)](https://www.apcuk.co.uk/) for the development of a hydrogen fuel cell coach.

23. Do you operate a coach fleet?

24. (Coach fleet operators only) What is the size of your coach fleet?

- 1 to 4 coaches
- 5 to 9 coaches
- 10 to 24 coaches

- 25 to 50 coaches
- more than 50 coaches

25. (Coach fleet operators only) Which zero emission technologies would you consider for decarbonising your coach fleet and what is your assessment of them?

26. (Coach operators only) Which zero emission technology option do you think would work best for your business and why?

27. What implications do you see the transition to zero emission coaches having on existing coach operations?

28. What behavioural changes might be needed to accommodate the transition to zero emissions?

Zero emission coach refuelling and recharging

As with zero emission HGVs, the government understands that recharging and refuelling infrastructure is vital to a successful transition.

The current range for zero emission coaches is between 150 and 200 miles, however we expect that range to increase soon as the technology develops.

When responding to the following question state the proportion of recharging and refuelling that you estimate to take place en-route as opposed to at depots.

29. Based on your knowledge of current operations, what proportion of zero emission coach hydrogen refuelling do you estimate will take place at the following locations, and why?

a. En-route:

- 1). destinations (for example, stadiums, tourist attractions, national parks)
- 2). public locations (for example, motorway service areas)
- 3). transport hubs (for example, ports, airports, coach stations, rail terminals)
- 4). other locations (please specify)

b. Depots

30. Based on your knowledge of current operations, what proportion of zero emission coach recharging do you estimate will take place at the following locations, and why (add detail, where available, on the expected power requirement for charge points at each location)?

a. En-route:

- 1). destinations (for example, stadiums, tourist attractions, national parks)
- 2). public locations (for example, motorway service areas)

- 3). transport hubs (for example, ports, airports, coach stations, rail terminals)
- 4). other locations (please specify)

b. Depots

31. What do you consider the barriers are to installing and accessing hydrogen refuelling infrastructure for zero emission coaches at the following locations (be clear if you are referring specifically to barriers in rural or urban locations)?

- a. Depots
- b. Destinations (for example, stadiums, tourist attractions, national parks)
- c. Public locations (for example, motorway service areas)
- d. Transport hubs (for example, ports, airports, coach stations, rail terminals)
- e. Other locations (please specify)

32. What do you consider the barriers are to installing and accessing recharging infrastructure for zero emission coaches at the following locations (be clear if you are referring specifically to barriers in rural or urban locations)?

- a. Depots
- b. Destinations (for example, stadiums, tourist attractions, national parks)
- c. Public locations (for example, motorway service areas)
- d. Transport hubs (for example, ports, airports, coach stations, rail terminals)
- e. Other locations (please specify)

33. What specific infrastructure considerations are there for zero emission coaches travelling across international borders?

34. Do you think that members of the coach sector could benefit from working together to support their transition to zero emission, particularly in terms of infrastructure?

35. How do you think that members of the coach sector could benefit from working together to support their transition to zero emission, particularly in terms of infrastructure?

HGVs and coaches

It is likely that the technical requirements for recharging and refuelling coaches will be similar to those for HGVs. There will, however, be passenger needs and safety considerations for coaches that do not apply to HGVs.

36. Do you think that zero emission HGVs and zero emission coaches will have similar infrastructure requirements?

37. How do you think that zero emission HGV and zero emission coach infrastructure requirements will be similar?

38. Do you think that members of the HGV and coach sectors could benefit from working with each other to support their transition to zero emission, particularly in terms of infrastructure?

39. How do you think that members of the HGV and coach sectors could benefit from working with each other to support their transition to zero emission, particularly in terms of infrastructure?

40. Do you have any other comments to make?

Further information

Freedom of information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory code of practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the department.

The department will process your personal data in accordance with the Data Protection Act (DPA) and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Data protection

The DfT is carrying out this consultation to gather evidence on infrastructure for zero emission heavy goods vehicles and coaches. This consultation, and the processing of personal data that it entails, is necessary for the exercise of our functions as a government department. If your answers contain any information that allows you to be identified, DfT will, under data protection law, be the controller for this information.

As part of this consultation we're asking for your name and email address. This is in case we need to ask you follow-up questions about any of your responses. You do not have to give us this personal information. If you do provide it, we will use it only for the purpose of asking follow-up questions.

Your personal data is processed on behalf of DfT by Smartsurvey, as they run the survey collection software. You can [view their privacy policy](https://www.smartsurvey.co.uk/privacy-policy) (<https://www.smartsurvey.co.uk/privacy-policy>).

Your personal data will be securely deleted 12 months after the consultation analysis report has been published.

[DfT's privacy policy](https://www.gov.uk/government/organisations/department-for-transport/about/personal-information-charter) (<https://www.gov.uk/government/organisations/department-for-transport/about/personal-information-charter>) has more information about your rights in relation to your personal data, how to complain and how to contact the data protection officer.

Consultation principles

This consultation is being conducted in line with the [government's consultation principles](https://www.gov.uk/government/publications/consultation-principles-guidance) (<https://www.gov.uk/government/publications/consultation-principles-guidance>).

If you have any comments about the consultation process, contact us by email at consultation@dft.gsi.gov.uk or post at the following address:

Consultation Co-ordinator
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