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# Consultation on a zero emission vehicle (ZEV) mandate and CO<sub>2</sub> emissions regulation for new cars and vans in the UK



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# Contents

Executive summary	5
ZEV mandate – overview	6
Non-ZEV CO <sub>2</sub> emissions standard – overview	8
How to respond	10
Freedom of Information	10
Data Protection	11
Territorial extent:	11
1. Why a ZEV mandate is necessary and appropriate	12
The United Kingdom’s climate goals and benefits of ZEVs	12
Policy to promote ZEVs in the United Kingdom	16
2. The path to zero emissions under the ZEV mandate	19
Legal framework for establishing a ZEV mandate	19
Annual zero emission sales targets for new cars	22
Annual zero emission sales targets for new vans	23
Applicability of the ZEV mandate	25
Trading	29
Flexibility mechanisms for ZEV sales targets	29
Minimum requirements for ZEVs	32
Opportunities for additional credits	35
Payments for non-compliance with annual ZEV targets	37
3. Regulating emissions from new non-zero emission vehicles	40
Legal framework for the non-ZEV CO <sub>2</sub> emissions standard	40
Determining a manufacturer’s baseline target	41
Non-ZEV CO <sub>2</sub> standard trajectories	42

Applicability of the non-ZEV CO <sub>2</sub> emissions standard	43
Targets for manufacturers entering the UK market	45
Trading	46
Transfer of ZEV mandate allowances to non-ZEV CO <sub>2</sub> scheme	46
Transfer of non-ZEV CO <sub>2</sub> allowances to ZEV mandate scheme	47
Payments for non-compliance with non-ZEV CO <sub>2</sub> standard	48
4. Timelines and reporting processes for new regulatory framework	49
Data to be submitted	49
Timeline for annual reporting and compliance	49
Review of regulation	51
What will happen next	53
Annex A: Full list of consultation questions	54
Annex B: Consultation principles	56

# Executive summary

## Introduction

1. The transport sector produces the greatest share of UK domestic greenhouse gases (GHGs) and has seen relatively little change since 1990 while emissions from other sectors (such as energy and business) have steadily fallen.<sup>1</sup> Cars and vans alone were responsible for 18% of the UK's total domestic GHG emissions in 2021, meaning that removing the exhaust emissions from new cars and vans sold in the UK is fundamental to decarbonising transport and the UK economy.<sup>2</sup> Although new cars and vans have become more fuel efficient over recent years, it is now clear that zero emission vehicles (ZEVs) are the only way to decarbonise road transport in line with the UK's net zero legislation, and to end our contribution to climate change by 2050. While this policy is primarily aimed at reducing GHG emissions, it is also expected to deliver significant air quality benefits, for example by leading to reductions in nitrogen oxides (NO<sub>x</sub>) emissions.
2. The UK is not undertaking this transition alone. A global race to ZEVs is underway that will deliver real benefits for drivers in terms of running costs and see new investments in battery production, electric motors, power electronics and supply chains. This has the potential to create thousands of highly skilled clean jobs, support new export opportunities for UK business at the forefront of this change, reduce our reliance on fossil fuels and secure our future energy security. ZEVs can improve public health and have the potential to transform our urban realm.
3. The transition cannot happen through market forces alone. The UK Government has committed to end the sale of new petrol and diesel cars and vans by 2030 and for all new cars and vans to be fully zero emission at the exhaust by 2035. Zero emission vehicle sales have grown rapidly in the UK in the past decade, reaching 15% of new car sales in the 12 months up through June 2022.<sup>3</sup> Requiring a minimum percentage of manufacturer's new car and van sales to zero emission each year from 2024 will ensure their future supply and provide certainty to chargepoint operators, and energy

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<sup>1</sup><https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2021>

<sup>2</sup><https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf>

<sup>3</sup><https://www.gov.uk/government/statistical-data-sets/vehicle-licensing-statistics-data-tables>

suppliers to coordinate the necessary investments in new technology and infrastructure.

4. Following a Green Paper on New Road Vehicle CO<sub>2</sub> Emissions Regulatory Framework for the United Kingdom (2021), a technical consultation on ZEV mandate policy design (2022), and extensive stakeholder engagement, the UK Government proposes to establish a new regulatory framework for the UK. This will be a ZEV mandate requiring an increasing share of zero emission cars and vans, alongside a CO<sub>2</sub> emissions regulation to ensure that new non-zero emission cars and vans do not become more polluting in future years. ZEV mandates have successfully spurred greater ZEV availability and choice for consumers and higher uptake in the United States, Canada and China.
5. This initial tranche of legislation is intended to take effect from 2024 and cover the period through to 2030. This consultation lays out the proposed regulation for both ZEV and non-ZEV elements. Given ongoing uncertainties around the real-world emissions and test cycle monitoring of various non-ZEV drivetrain technologies, which we continue to track, the UK Government cannot yet provide a detailed definition of significant zero emission capability (SZEC) for cars and for vans. Therefore, this legislation does not define SZEC requirements. We intend to set out an approach in mid-2023 and implement it in future legislation, though the UK Government's commitment to ending the sale of all new petrol and diesel cars and vans by 2030 and all new non-zero emission cars and vans by 2035 is unchanged.
6. The proposed new regulatory framework for car and van CO<sub>2</sub> emissions is a devolved policy area in accordance with the Climate Change Act 2008. The Devolved Administrations and the UK Government each has the right to enact this proposed policy or a separate and distinct scheme. As such, the Devolved Administrations and the UK Government are undertaking this consultation jointly to gather views on the proposed approach to a UK-wide framework as well as alternative approaches.

## ZEV mandate – overview

7. The primary lever to deliver legally required reductions in carbon emissions from light-duty road transport is the ZEV mandate. Trading schemes for both new cars and vans will be enacted using powers in the Climate Change Act (2008). Each year, manufacturers will receive allowances to sell non-ZEV vehicles up to a given percentage of their fleet of new cars and vans, with the intention that ZEVs account for the remainder of sales (the ZEV target). Any excess non-ZEV sales must be covered by purchasing allowances from other manufacturers, by using allowances from past or future trading periods (banking or borrowing) during the initial years of the policy or by offsetting with credits.
8. The ZEV mandate will apply to all manufacturers responsible for the type-approval of cars or vans registered in the UK, irrespective of the type approval route. Manufacturers that are part of a group of connected undertakings may choose to form a closed pool and participate as a group. Recognising their smaller contribution to emissions and more limited resources, small volume manufacturers (selling fewer than 2,500 cars or vans annually in the UK) will be exempted from targets until the end of 2029. Special purpose vehicles (SPVs) are also considered out of scope from

the ZEV mandate, given challenges in producing zero emission SPVs, but zero emission SPVs would earn ZEV credits to recognise the emissions reductions that such vehicles would create.

9. To qualify as a ZEV, it is proposed that a vehicle must emit no CO<sub>2</sub> or any other targeted greenhouse gases at the exhaust, have a minimum range of 120 miles according to the WLTP test standard, and meet certain minimum warranty requirements to ensure a consistent and predictable consumer experience. These requirements are met by the vast majority of ZEVs sold in the UK market in 2022.
10. The proposed minimum ZEV target trajectory for new cars sold begins at 22% in 2024, increasing to 80% in 2030 reaching 100% in 2035. The proposed minimum ZEV target trajectory for new vans sold begins at 10% in 2024 and reaches 70% in 2030 on the way to 100% in 2035. The legislation being proposed will cover ZEV and non-ZEV requirements in the 2024-2030 period; legislation covering the 2031-2035 period will be introduced at a later point, but it is intended that the legislative minimum trajectories will be at least as ambitious as set out in current trajectories.
11. If manufacturers exceed their ZEV targets, excess ZEV mandate (ZEM) allowances may be traded freely to other manufacturers for any price.
12. The transition to ZEVs has increased rapidly in recent years. However, the UK Government recognises that some vehicle manufacturers face challenges meeting targets in the initial years as they shift their business towards ZEVs. Therefore, this proposal includes some additional flexibilities during the initial phase of the regulation, from 2024-2026. During that phase, manufacturers may borrow a limited number of ZEV allowances from future periods if they are unable to achieve compliance from their own sales.
13. However, the number that may be borrowed is capped and will decline each year: 75% of the target may be covered by borrowing in 2024, 50% in 2025 and 25% in 2026. Furthermore, any borrowing must be repaid with 3.5% annual interest to maintain carbon savings. Beginning in 2027, borrowing from future trading periods would not be allowed, and participants' deficits must be repaid by the end of 2027.
14. To promote good supply of ZEVs to consumers and allow for differences in manufacturer transition plans, unused allowances may be banked for use in future years. This flexibility will extend at least until the end of 2030, but banked allowances will expire if not used after 3 years to ensure that sufficient ZEV allowances are available for effective trading.
15. This is an opportunity to earn additional ZEV credits for ZEVs deployed into car clubs, which can decongest our roads and offer a zero emission transport solution to a wider set of users. Specifically, we suggest that each ZEV registered in an approved car club would earn an additional 0.5 credits. Qualifying cars or vans must remain in use in a car club for 2 years, and manufacturers may not earn extra credits for more than 5% of their total car or van sales.
16. To ensure the benefits of ZEVs are available for those with reduced mobility and to promote the deployment of ZEVs in this sector, the proposal also offers extra credits for ZEVs that are converted into wheelchair accessible vehicles (WAVs). Specifically,

non-ZEV WAVs would not be counted in a manufacturer's activity, and we suggest that manufacturers may earn 1.5 credits for each ZEV converted to a wheelchair accessible vehicle.

17. If manufacturers cannot meet compliance through in-year allocated allowances, banked or borrowed allowances, allowances purchased from other manufacturers through trading, or bonus credits, they must make a payment to government. The proposal suggests payments of £15,000 per non-ZEV car and £18,000 per non-ZEV van registered which is not covered by allowances.

## Non-ZEV CO<sub>2</sub> emissions standard – overview

18. The goal of this new regulatory framework is to support the rapid shift toward ZEVs and provide market certainty for the automotive, chargepoint and energy sectors and their supply chains. Additional research and development into further incremental improvements to combustion engine efficiency technologies is no longer a key objective. The framework includes a CO<sub>2</sub> emissions standard applying to new non-ZEV cars and vans to ensure they do not become less efficient and more polluting over time.
19. These standards will be implemented as trading schemes under the Climate Change Act (2008). Each manufacturer will receive allowances according to a benchmarked CO<sub>2</sub> emissions performance (in grams of CO<sub>2</sub> per kilometre according to the WLTP standard) multiplied by the number of non-zero emission cars or vans sold in the relevant calendar year. The sum of the CO<sub>2</sub> ratings of all non-zero emission cars or vans sold in each year (the regulated activity) must be covered by allowances. Manufacturers may trade excess allowances freely at any price.
20. We propose that manufacturers' non-ZEV CO<sub>2</sub> emissions targets for the car and van schemes will be determined by the average CO<sub>2</sub> emissions ratings of new non-ZEV cars and vans sold by that manufacturer in 2021. These targets would be constant for the duration of the regulation and would not be adjusted according to weight, powertrain mix or other factors.
21. Micro volume manufacturers (selling fewer than 1,000 cars or vans per year) will continue to receive exemptions from the CO<sub>2</sub> emissions standard. All manufacturers selling at least 1,000 cars or 1,000 vans (within the respective schemes) will receive targets using the above method. SPVs, including WAVs, will be exempted from the non-ZEV CO<sub>2</sub> emissions standard, as they are exempted under current UK legislation and therefore cannot be considered when determining the baseline emissions data.
22. As this framework is intended to support a rapid shift to ZEVs we propose that manufacturers exceeding their ZEV mandate targets may use excess ZEV allowances to count toward their non-ZEV CO<sub>2</sub> obligation. Specifically, ZEV car allowances may be converted into allowances for the car non-ZEV CO<sub>2</sub> emissions scheme; and ZEV van allowances may be converted into allowances for the van non-ZEV CO<sub>2</sub> emissions scheme. The rates of conversion shall be determined based on the average WLTP ratings of new non-zero emission cars and vans in 2021.



23. Recognising that manufacturers have invested in a variety of technologies to reduce their fleets' overall CO<sub>2</sub> emissions, we propose that during the first three years of the new framework (2024-2026), manufacturers may use excess allowances in the non-ZEV CO<sub>2</sub> trading schemes to assist in compliance with the ZEV mandate targets. Specifically, 167 car CO<sub>2</sub> allowances may be exchanged for one ZEV car credit and 216 van CO<sub>2</sub> allowances may be exchanged for one ZEV van credit; these transfer rates reflect the real-world carbon contribution of non-ZEV vehicles. The number of credits that may be earned in this way is limited to 25% of a manufacturer's ZEV target in each year.
24. If a manufacturer cannot meet their non-ZEV CO<sub>2</sub> emissions standard after trading and/or the transfer of ZEV allowances, they must make a payment equivalent to £86 per gram of CO<sub>2</sub> per kilometre exceedance over the non-ZEV fleet multiplied by the number of vehicles. This is equivalent to the fine structure under existing UK CO<sub>2</sub> emissions regulation.
25. Considering the dynamic nature of the ZEV market and recognising that in some extremely limited cases of unprecedented events compliance might become impossible, we propose to monitor market conditions and update the regulation as needed, with any major changes subject to advance notice and consultation.

## How to respond

The consultation period began on 30 March and will run until 24 May. Please ensure that your response reaches us before the closing date. If you would like further copies of this consultation document, it can be found at <https://www.gov.uk/government/consultations/a-zero-emission-vehicle-zev-mandate-and-co2-emissions-regulation-for-new-cars-and-vans-in-the-uk> or you can contact [zevmandate@dft.gov.uk](mailto:zevmandate@dft.gov.uk) if you need alternative formats (Braille, audio CD, etc.).

Please send consultation responses to:

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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.

## 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 Department for Transport (DfT), along with the Department for Infrastructure (Northern Ireland), Scottish Government and Welsh Government are carrying out this consultation on proposals for a Zero Emission Vehicle (ZEV) mandate and CO<sub>2</sub> Emissions Regulatory Framework for new cars and vans in the United Kingdom. We will, under data protection law, be the Joint Controllers for any information that allows you to be identified. This consultation and the processing of personal data that it entails is necessary for the exercise of our functions as government departments.

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, email address and organisation. 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. We will not use your name or other personal details that could identify you when we report the results of the consultation. DfT are leading on the analysis for this consultation, their privacy policy 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 on a secure IT system within DfT and destroyed within 12 months after the consultation has been completed.

## Territorial extent:

This consultation relates to proposals to develop a new UK vehicle emissions regulations framework which will operate across England, Scotland, Wales and Northern Ireland subject to approval by each of the devolved parliaments and assemblies. This is a joint consultation, published by the UK Government, Scottish Government, Welsh Government and the Department of Infrastructure for Northern Ireland.

# 1. Why a ZEV mandate is necessary and appropriate

## The United Kingdom's climate goals and benefits of ZEVs

- 1.1 In 2019, the United Kingdom became the first major economy in the world to legislate its commitment to achieve net zero greenhouse gas emissions by 2050. In Scotland, the ambition is for Scotland to be carbon neutral by 2040, and to emit net-zero emissions by 2045. These remain amongst the most ambitious targets in the world and are aligned with a path to keep global warming to below 1.5°C above pre-industrial levels. Ending our contribution to climate change is a once in a generation opportunity for new clean jobs and growth.
- 1.2 Achieving it requires contributions from all sectors of the economy, as set out in the Net Zero Strategy (2021).<sup>4</sup> Transport is a particularly critical area for action. As shown in Figure 1, transport accounted for 26% of greenhouse gases emitted in the UK in 2021, more than any other sector.<sup>5</sup> Cars (dark green) and light commercial vehicles (primarily vans, light green) emissions have remained relatively high while other sectors, like energy supply and business, have fallen dramatically.

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<sup>4</sup> Source: <https://www.gov.uk/government/publications/net-zero-strategy>

<sup>5</sup> National statistics source: <https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2021>

Consultation on a zero emission vehicle (ZEV) mandate and CO<sub>2</sub> emissions regulation for new cars and vans in the UK

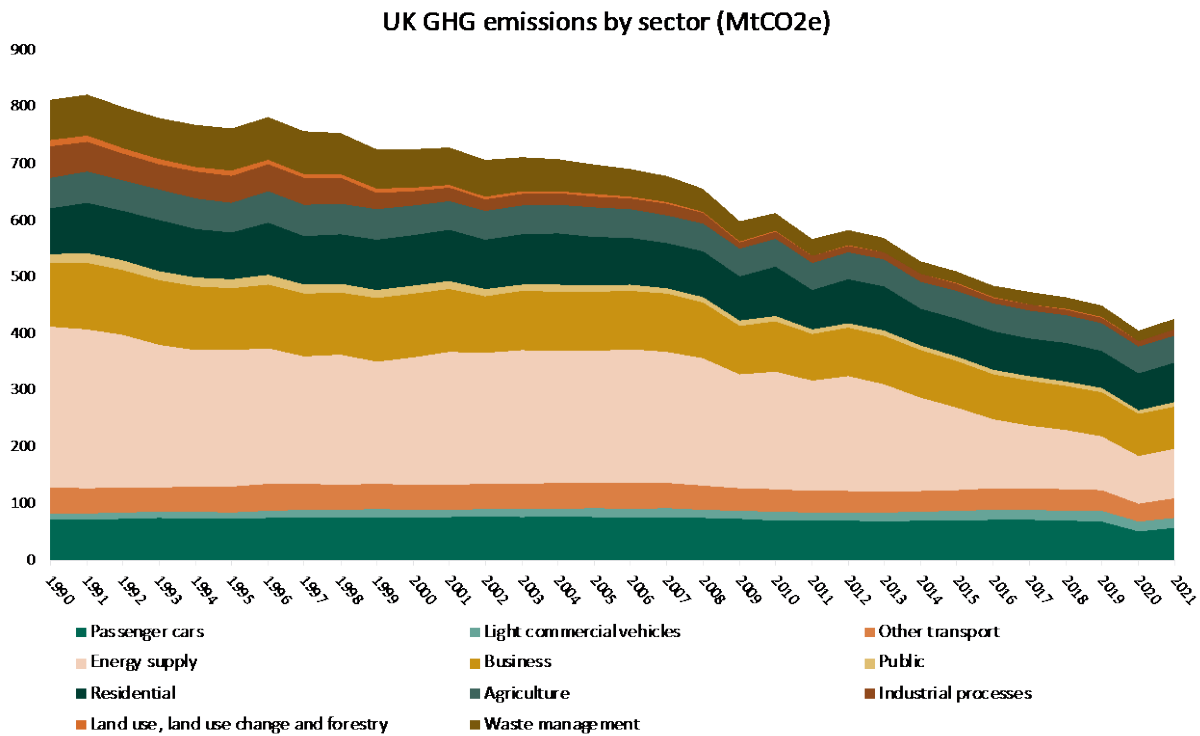


Figure 1. Contribution of different sectors to the UK's greenhouse gas emissions from 1990-2021

1.3 Within transport, cars and vans were responsible for 52% and 17% of greenhouse gas emissions respectively in 2021, as shown in Figure 2. A strong plan to tackle the emissions from these vehicles, representing the majority of emissions in the most polluting sector of the economy, is essential to meeting the UK's climate goals.

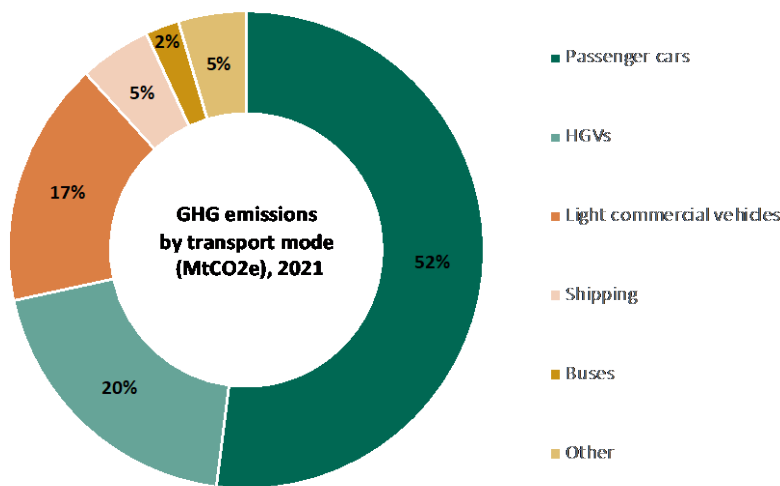


Figure 2. Greenhouse gas emissions by mode within the UK transport sector, 2021

1.4 Fortunately, technologies exist which can drastically reduce the climate impacts of road transport. Battery electric vehicles (BEVs), the most common type of ZEV, are

about 3 times as energy efficient as conventional petrol or diesel vehicles.<sup>6</sup> They can make the best use of the UK’s renewable energy, which already represents around 40% of UK electricity generation and is set to rise to 100% by 2035.<sup>7</sup>

1.5 For these reasons, a battery electric car driven in the UK today produces much less CO<sub>2</sub> than a comparable petrol car, and these savings will grow as electricity production becomes cleaner.<sup>8</sup> Figure 3 illustrates projections for the lifetime emissions for petrol, hybrid and battery electric cars sold in the UK for 2030 on a per-kilometre basis, including manufacture of the vehicle and battery, maintenance, fuel consumption, upstream emissions from fuel and electricity production and end-of-life handling (below the x-axis). The percentage reduction in lifecycle emissions compared to the petrol car is labelled for each vehicle type. Even when the energy to produce the vehicles is included, a battery electric car results in 76% less CO<sub>2</sub> emissions over its lifetime. A battery electric car running fully on renewable power is cleaner still and would result in about 84% less CO<sub>2</sub> emissions than a petrol car over its lifetime.

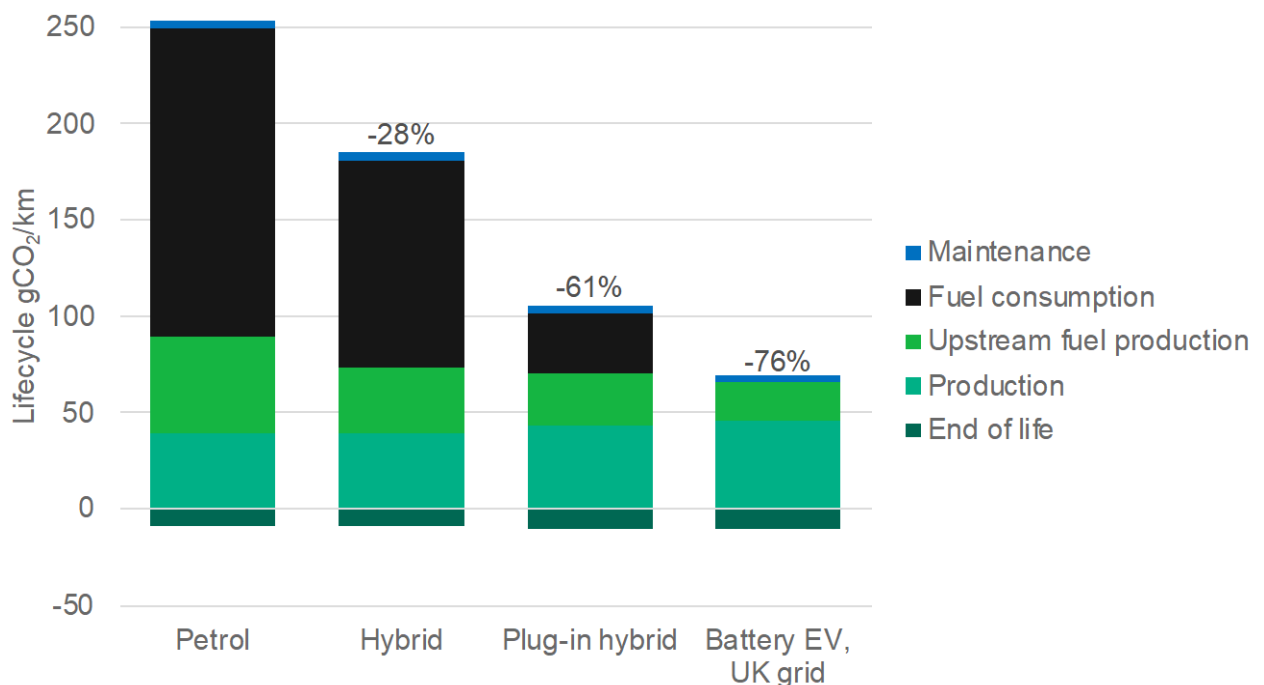


Figure 3. Life-cycle emissions assessment of petrol, hybrid, plug-in hybrid and battery electric cars sold in the UK in 2030, indicating the percentage reduction compared to a petrol car<sup>8</sup>

1.6 Petrol and diesel cars and vans are also a major contributor to the health impacts of air pollution in the UK. ZEVs are expected to deliver improvements in air pollution, most notably nitrogen oxides (NO<sub>x</sub>) and fine particulate matter (PM<sub>2.5</sub>), both of which are harmful to human health. Emissions of NO<sub>x</sub> and PM<sub>2.5</sub> from road transport have fallen by more than half over the last 30 years due, in part, to more stringent vehicle

<sup>6</sup> Source: <https://theicct.org/publication/a-global-comparison-of-the-life-cycle-greenhouse-gas-emissions-of-combustion-engine-and-electric-passenger-cars/>

<sup>7</sup>Source: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/103399/0/net-zero-strategy-beis.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/103399/0/net-zero-strategy-beis.pdf)

<sup>8</sup> Source: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/106260/3/lifecycle-analysis-of-UK-road-vehicles.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/106260/3/lifecycle-analysis-of-UK-road-vehicles.pdf)

emissions standards and fleet turnover. However, road transport in the UK in 2021 accounted for 27% of NO<sub>x</sub> emissions and 13% of PM<sub>2.5</sub> emissions.<sup>9</sup>

- 1.7 Road transport emissions can be divided into those arising from exhaust and non-exhaust (tyre wear, brake wear and road abrasion) sources. Electric vehicles emit no pollution from the exhaust, including (NO<sub>x</sub>) or particulate matter (PM<sub>2.5</sub>), representing an opportunity for significant air quality benefits across the country, particularly in urban areas.<sup>10</sup> The move to zero tailpipe emissions, initially in cars and vans and then in heavier vehicles, has the potential to effectively eliminate transport-related NO<sub>x</sub> emissions from the roadside.
- 1.8 Electric vehicles do produce PM<sub>2.5</sub> from tyre and brake wear and road abrasion. As Figure 4 illustrates, emissions standards have dramatically reduced exhaust emissions of PM<sub>2.5</sub> such that non-exhaust emissions are now the majority. The move to ZEVs can reduce exhaust PM<sub>2.5</sub> emissions still further. For non-exhaust emissions, the Department for Transport is conducting a significant research project to understand better the measurement techniques and materials properties of non-exhaust emissions from road vehicles, and assess differences in particulate emissions from electric vehicles compared to petrol and diesel vehicles. The UK Government has set legally binding long-term targets under the Environment Act 2021 to further drive down PM<sub>2.5</sub> emissions, supported by interim targets in the recent Environmental Improvement Plan.<sup>11</sup>

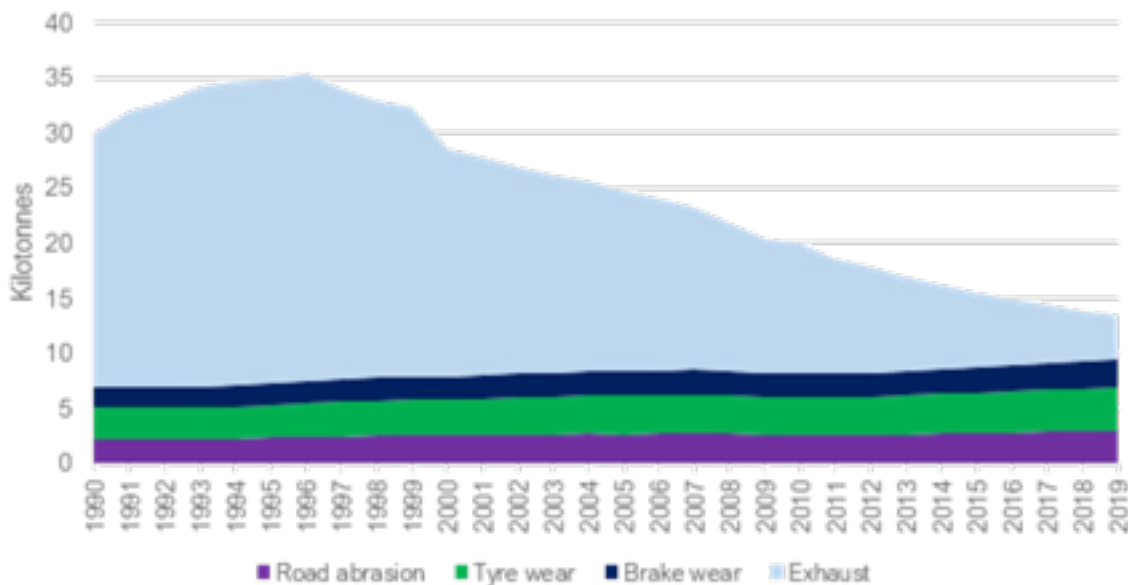


Figure 4. Annual PM<sub>2.5</sub> emissions from road transport in the UK by source. Source: NAEI

<sup>9</sup> Source: <https://www.gov.uk/government/statistics/emissions-of-air-pollutants/emissions-of-air-pollutants-in-the-uk-nitrogen-oxides-nox>

<sup>10</sup> Sources: [https://mdpi-res.com/d\\_attachment/atmosphere/atmosphere-12-01491/article\\_deploy/atmosphere-12-01491.pdf?version=1636617002](https://mdpi-res.com/d_attachment/atmosphere/atmosphere-12-01491/article_deploy/atmosphere-12-01491.pdf?version=1636617002), <https://www.eea.europa.eu/highlights/eea-report-confirms-electric-cars>, <https://www.oecd-ilibrary.org/sites/4a4dc6ca-en/index.html?itemId=/content/publication/4a4dc6ca-en>

<sup>11</sup>Source: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1133967/environmental-improvement-plan-2023.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1133967/environmental-improvement-plan-2023.pdf)

- 1.9 The transition to ZEVs is therefore a key environmental improvement measure, the largest carbon saving policy identified in the Net Zero Strategy. But the policy also offers new economic opportunities for the UK that come from its position as a global leader in the transition, bringing new, highly skilled jobs into our energy and automotive sectors and supply chains, as well as ensuring investment certainty for infrastructure provision.
- 1.10 Because of their greater efficiency, ZEVs offer an opportunity for ongoing fuel savings for drivers. Additionally, because they have fewer moving parts, ZEVs require less regular maintenance, providing cost savings to a driver each year.

## Policy to promote ZEVs in the United Kingdom

- 1.11 The UK has made commitments to transition the vehicle parc to zero emission, but regulations are needed to ensure delivery of these commitments and ensure an ambitious pathway towards 2035. A robust regulatory framework is necessary to set the minimum pace of this transition, ensure sufficient supply of vehicles for consumers, and provide investment certainty for the deployment of supporting infrastructure.
- 1.12 The emissions from fossil fuel-powered vehicles, including greenhouse gases and air pollution, represent significant negative externalities that are not reflected in the price paid by consumers. The government has a role in addressing this market failure. While it is possible to internalise the costs imposed by fossil fuel vehicles through taxation, this would raise costs on consumers and would not ultimately eliminate the problem. Instead, government now has an opportunity to reduce and ultimately eliminate the negative impacts of fossil fuel vehicles through regulations that require a shift to zero emission vehicles.
- 1.13 Historically, exhaust emissions from new cars and vans in the UK were regulated by the European Union's CO<sub>2</sub> emission performance standards. These standards require each vehicle manufacturer to reduce their average CO<sub>2</sub> emissions per kilometre at five-year intervals. ZEVs are counted as emitting 0 grams per kilometre. Therefore, these CO<sub>2</sub> standards encouraged the introduction of more ZEVs, but did so alongside supporting dieselisation, the development of technologies to improve the efficiency of internal combustion engine (ICE) vehicles and hybrids, as well as a move to plug-in hybrids vehicles as part of the early transition. Many of the theoretical emission savings have not materialised, as manufacturers have designed vehicles optimised for lower emissions during testing rather than in the real world.<sup>12</sup>
- 1.14 Zero emission vehicles offer far greater societal benefits than these incremental improvements, but left alone, the market is unlikely to deliver the transition at pace to meet climate targets. In 2020, the UK Government consulted on the timeline to end the sale of new non zero emission vehicles. In November 2020, the UK Government announced that all new cars and vans must be fully zero emission from 2035, bringing forward the target from 2040. Additionally, no new petrol or diesel cars or vans may be sold from 2030, and government set out that between 2030 and 2035, new cars and vans can only be sold if they have significant zero emission capability. As part of Mission Zero for transport, the Scottish government has committed to phasing out the need to buy new petrol and diesel cars and vans by 2030.<sup>13</sup>

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<sup>12</sup> Source: <https://theicct.org/publication/on-the-way-to-real-world-co2-values-the-european-passenger-car-market-in-its-first-year-after-introducing-the-wtpp/>

<sup>13</sup> Source: <https://www.transport.gov.scot/our-approach/mission-zero-for-transport/>



- 1.15 Since then, the UK Government has published multiple consultations about the policies needed and their design to ensure that this goal is met. This includes the 2035 delivery plan, published in July 2021, which lays out policies to make ZEVs affordable, improve consumer awareness, accelerate infrastructure rollout, transition fleets, develop a UK supply chain and maximise the sustainability of ZEVs.<sup>14</sup>
- 1.16 When the UK exited the EU in early 2020, these CO<sub>2</sub> standards were retained, with the UK matching the EU targets for 2021. However, EU exit has provided an opportunity to re-examine the system for regulating vehicle emissions in light of the government's 2030 and 2035 targets and to ensure it delivers for the UK. Government published a Green Paper on options for a new CO<sub>2</sub> regulatory framework for consultation in June 2021<sup>15</sup> proposing to either tighten the existing CO<sub>2</sub> regime or add a zero emission vehicle mandate in addition to CO<sub>2</sub> standards.
- 1.17 The green paper received 61 responses from industry (vehicle manufacturers, energy suppliers, chargepoint operators and more), environmental groups, and more. Although views were mixed on the ideal framework to meet the government's targets, a majority of views supported a UK ZEV mandate. Based on these responses and further analysis, in October 2021 the UK Government announced that it would adopt a ZEV mandate whilst continuing to regulate the exhaust CO<sub>2</sub> emissions of the non-ZEV portion of the new car and van fleets to make sure they do not increase.<sup>16</sup> This regulatory framework is uniquely suited to provide guidance to industry on the ultimate direction of the automotive sector and deliver the benefits of ZEVs to UK drivers as quickly as possible. Through its annual targets, it will help to coordinate public and private investments in chargepoints, energy system upgrades and manufacturing.
- 1.18 The UK Government published a Technical Consultation seeking views on key design elements of the new regulatory framework in April 2022; the consultation ran through to 10 June 2022.<sup>17</sup> It included the trajectories of annual ZEV requirements for cars and vans, possible derogations and exemptions, stringency of the non-ZEV CO<sub>2</sub> emissions regulations, flexibility mechanisms, and more. 76 responses to the Technical Consultation were received from multiple sectors of industry, consumer organisations, environmental groups and individuals, which have been essential to determining our proposals set out in this consultation. Alongside this publication, the UK Government has also published its response to the Technical Consultation.
- 1.19 Figure 5 illustrates recent growth in new ZEV sales in the UK for cars (blue) and light goods vehicles (LGVs, equivalent to vans, in orange), along with the timeline of these consultations. The shares are shown using a 12-month rolling average to account for

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<sup>14</sup> DfT sources: <https://www.gov.uk/government/publications/transitioning-to-zero-emission-cars-and-vans-2035-delivery-plan>, <https://www.gov.uk/government/publications/uk-electric-vehicle-infrastructure-strategy>

<sup>15</sup> DfT source: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/100198/1/green-paper-on-a-new-road-vehicle-co2-emissions-regulatory-framework-for-the-united-kingdom-print-version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/100198/1/green-paper-on-a-new-road-vehicle-co2-emissions-regulatory-framework-for-the-united-kingdom-print-version.pdf)

<sup>16</sup> DfT source: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/106701/8/outcome-and-government-response-to-the-green-paper-on-a-new-road-vehicle-co2-emissions-regulatory-framework-for-the-uk.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/106701/8/outcome-and-government-response-to-the-green-paper-on-a-new-road-vehicle-co2-emissions-regulatory-framework-for-the-uk.pdf)

<sup>17</sup> DfT source: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/106704/1/technical-consultation-on-zero-emission-vehicle-mandate-policy-design.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/106704/1/technical-consultation-on-zero-emission-vehicle-mandate-policy-design.pdf)

typical seasonal patterns. The chart does not include plug-in hybrid vehicles, which were approximately 6% of car sales in the 12 months to June 2022.<sup>18</sup>

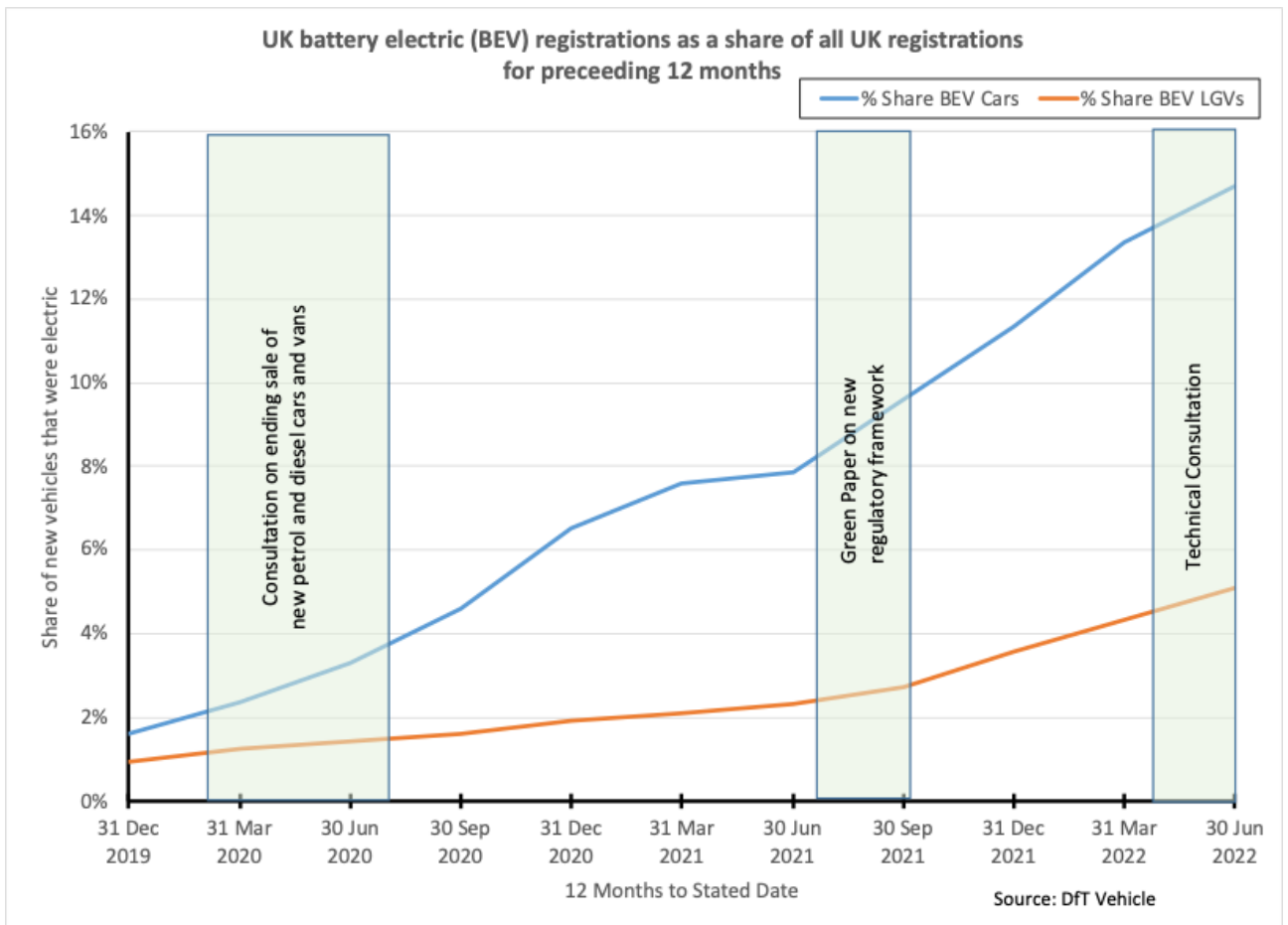


Figure 5. Zero emission share of new cars and vans in the UK and timeline of consultations leading to the ZEV mandate.

- 1.20 The figure shows a dramatic increase in sales of new zero emission cars and vans. In early 2020, ZEVs represented less than 2% of new cars and less than 1% of new vans. Over the 12 months leading up to September 2022, ZEVs represented over 15% of new cars and almost 6% of new vans. In 2021, the UK ranked 12<sup>th</sup> in the world in the share of new cars that were zero emission.<sup>19</sup>
- 1.21 This upward trajectory confirms that a transition to ZEVs is becoming more technologically feasible, reinforcing the rationale to provide further strategic and investment guidance to all stakeholders. The ZEV mandate will build on the government’s extensive support for ZEVs and ensure that the UK remains at the forefront of defining the future of transport and developing clean technology to tackle the climate crisis. We are pleased to present this policy for consultation and invite you to share your feedback as we embark on the next step of this transition.

<sup>18</sup> Data is sourced from DfT Official Statistics produced by Vehicle Statistics team based on DVLA records. VEH1153a: Vehicles registered for the first time by body type and fuel type: Great Britain and United Kingdom <https://www.gov.uk/government/statistical-data-sets/vehicle-licensing-statistics-data-tables>

<sup>19</sup> Source: <https://theicct.org/publication/global-ev-update-2021-jun22/>

## 2. The path to zero emissions under the ZEV mandate

### Legal framework for establishing a ZEV mandate

- 2.1 The proposed ZEV mandate would operate as a trading scheme under the powers of the Climate Change Act 2008 (CCA). The CCA provides for the Devolved Administrations and the UK Government to create trading schemes that operate by limiting activities that contribute to greenhouse gas emissions. As discussed above, cars and vans together represent the largest source of domestic greenhouse gas emissions in the UK. As such, the UK Government proposes to create a trading scheme to regulate the sale of new cars and vans. This scheme will have four components: the ZEV mandate for cars and vans and the non-ZEV CO<sub>2</sub> standard for cars and vans. We will appoint a trading scheme administrator to oversee and execute the combined scheme.<sup>20</sup> The remainder of this section will focus on the ZEV mandate schemes for cars and vans, which will have the same structure but operate independently.
- 2.2 The ZEV mandate components of the trading scheme will operate under Part 1, Schedule 2 of the CCA. Under this framework, the regulated activity is the sale of new cars or vans in the UK which are not zero emission (and meeting minimum technical criteria defined beginning in section 2.68). Participants in the schemes are vehicle manufacturers who register new cars or vans in the UK and are responsible for the Type Approval of those vehicles. If a manufacturer sells only one type of vehicle (i.e., only cars or only vans) in the UK, they would participate in only the respective scheme. Each year, all participants must meet compliance in the following way:

$$UK \text{ new non-ZEV sales activity} - \text{credits} \leq \text{allowances.}$$

- 2.3 The ZEV mandate will establish annual targets for the percentages of new cars and vans that emit zero greenhouse gas emissions at the exhaust; these are described in the following sections. Each year, the administrator will provide allowances for the share of vehicles not covered by the ZEV target, based on the manufacturer's total

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<sup>20</sup> Our expectation is that the administrator of the scheme would be the Secretary of State for Transport, potentially in conjunction with another person, but this is subject to change. Administrative functions may be delegated to another body.

car or van sales that year. Manufacturers must surrender one allowance in the respective scheme for each new car or van that is not zero emission. In contrast, a ZEV does not require an allowance. In this document, these allowances may be referred to as ZEVM (ZEV mandate) allowances.

- 2.4 Manufacturers may earn credits for the sale of zero emission cars and vans in particular use cases which have additional emissions savings and societal value. Each full credit earned will offset one unit (i.e., one new non-ZEV car or van) of the manufacturer's activity for that year.
- 2.5 Figure 6 illustrates how the regulation would work for a hypothetical manufacturer X who sells 100,000 new cars in the UK in a year with a 33% ZEV target (the proposed target for 2026). These cars consisted of 40,000 qualifying ZEVs (green bar, left) and 60,000 non-ZEVs (grey bar, left). Therefore, manufacturer X's activity is measured as 60,000. Based on the 33% ZEV target, manufacturer X would be allocated  $100,000 \times (100\% - 33\%) = 67,000$  allowances in that year (right side).
- 2.6 60,000 of these allowances would be surrendered to cover the activity (grey bar, right). This would leave 7,000 excess allowances (blue bar, right). The ZEV target will be increased each year, meaning that the number of allowances relative to the manufacturer's sales will decrease proportionately.

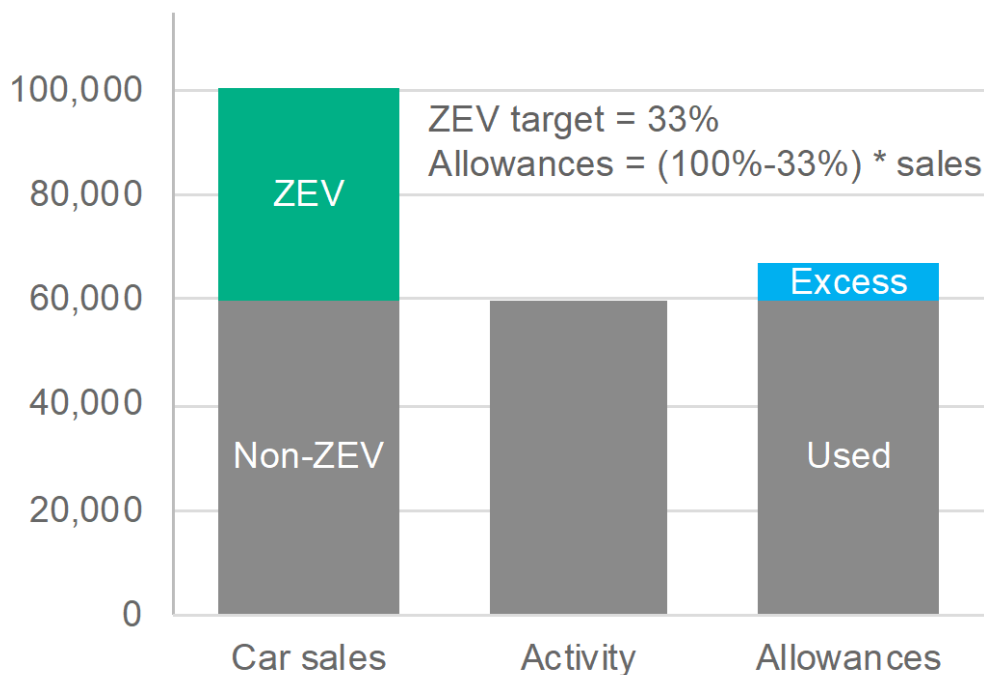


Figure 6. Breakdown of compliance pathway for hypothetical manufacturer selling 100,000 cars with a 33% ZEV target

- 2.7 As previously stated, from 2030, no new petrol or diesel cars or vans may be sold; all new non-ZEV cars and vans sold from 2030–2034 must have significant zero emission capability (SZEC). Given ongoing uncertainties around the real-world emissions and test cycle monitoring of various drivetrain technologies, which we continue to track, the UK Government cannot yet provide a detailed definition of SZEC for cars and for vans. This first tranche of legislation sets out legislative requirements up to and including 2030 and does not specify SZEC requirements for

vehicles from 2030. Further detail on this will be set out in mid-2023, though the UK Government's commitment is unchanged.

## Implementation of the new regulatory framework across the United Kingdom

- 2.8 The proposed new regulatory framework for new car and van emissions is a devolved policy area under the Climate Change Act 2008, meaning there could be the potential for separate ZEV mandates and CO<sub>2</sub> emissions trading scheme regulations across the UK. The UK Government and the Devolved Administrations are consulting jointly to gather views on the proposal for a UK-wide framework and to ensure a full and open consideration of alternative approaches. Each administration will determine whether the UK-wide scheme being proposed meets their own strategic climate objectives and could potentially to enact their own separate and distinct schemes. For instance, the Scottish Government will be issuing their next Climate Change Plan later this year, and remain committed to removing the need for new petrol and diesel cars and vans by 2030, in line with their advice from the Climate Change Committee. In that respect, the scheme outlined could be viewed as a floor rather than a ceiling on the pace of change and investment needed this decade.
- 2.9 However, separate schemes operating within the UK internal market would add complexity for manufacturers and place additional burdens on the Devolved Administrations. To lock in the climate benefits of this policy, ensure that the air quality and cost savings benefits of ZEVs are experienced across all parts of the UK, and minimise administrative burdens, the UK Government's preference is for this framework to apply across the whole of the UK. However, this is a devolved policy area. Through this consultation we are therefore also looking to understand how manufacturers and industry could have to comply with different schemes/target trajectories (for both the ZEV and non-ZEV elements of the framework)/annual requirements across or within different areas of the UK, including evidencing the potential impacts to customers, manufacturers and vehicle dealerships under such different jurisdictions.
- 2.10 The remainder of this consultation is written to describe a proposed framework that applies across the whole of the UK. If the territorial extent is more limited, select provisions may be adjusted in proportion to the relevant local vehicle markets.
- 2.11 **Question 1:**
- (a) Do you agree or disagree with the UK Government's preference to introduce a UK-wide regulatory framework?**
- (b) Or, do you agree or disagree with the introduction of different trading schemes with separate requirements in one or more of the nations, different from the rest of the UK?**
- Please explain your answer.**
- 2.11 The ZEV transition is underway right across the UK. The intention of this policy is to promote an equitable transition by increasing the availability of ZEVs and the rollout

of charging infrastructure across the UK as we prepare for the end of sales of new petrol and diesel cars and vans from 2030 and all new sales ZEV from 2035.

- 2.12 The annual targets for the share of cars and vans that must be zero emission (described in sections 2.16 and 2.20 respectively) are proposed to be UK-wide targets. At a functional level, this means that activity, allowances and credits are equivalent whether a vehicle is sold in England, Scotland, Wales or Northern Ireland. This proposal reflects that factors such as infrastructure, consumer preference and transport patterns may support accelerated uptake in certain areas.
- 2.13 However, as it is a devolved policy area, an alternative option could be to have each target apply separately for each nation that adopts this framework. However, this would likely require separate trading schemes, requiring redefining activity, allowances and credits for each nation, and it is the UK Government’s view that such a design would increase the administrative burden for governments and would be less flexible for manufacturers.

**2.14 Question 2:**

**(a) Do you agree or disagree with the UK Government’s preference to introduce UK-wide annual targets?**

**(b) Or, do you agree or disagree with year-on-year targets having to be met within each nation of the UK annually?**

**Please explain your answer.**

**Annual zero emission sales targets for new cars**

- 2.15 The minimum ZEV targets will build on the strong upward trajectory of ZEV car sales already seen in the UK (12% in 2021) on the way toward 100% in 2035, in line with the UK Government’s intention of allowing only new ZEVs to be sold in that year. This regulation will set minimum targets out to and including 2030; initial proposals for targets in 2031-2035 are also included for consultation. Government intends for a future tranche of legislation to implement binding targets at least as ambitious as those provided here.
- 2.16 The proposed trajectory for cars is presented below. This trajectory is the same as that set out in the technical consultation, following overarching feedback that these targets were ambitious but achievable and can help deliver the carbon savings needed. The targets begin at 22% in 2024 and reach 80% in 2030.

Table 1. Annual targets for ZEV sales shares from 2024-2035 for cars

<b>Year</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Target	22%	28%	33%	38%	52%	66%
<b>Year</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>
Target	80%	84%*	88%*	92%*	96%*	100%*

\*Target will be set out in future legislation.

2.17 Following the technical consultation, we considered two alternative car trajectories: a low scenario reaching 59% in 2030 and a high scenario reaching 97% in 2030. Targets for all three scenarios are shown in Figure 7 below, with the low and high targets provided only until 2030, the time horizon of this regulation. The central scenario is equivalent to the proposed targets in Table 1 above. The high scenario achieves much more substantial carbon reductions but poses a far greater challenge to the automotive industry and for related considerations such as the installation of charging infrastructure. These two additional scenarios are both analysed in the cost-benefit analysis assessment.

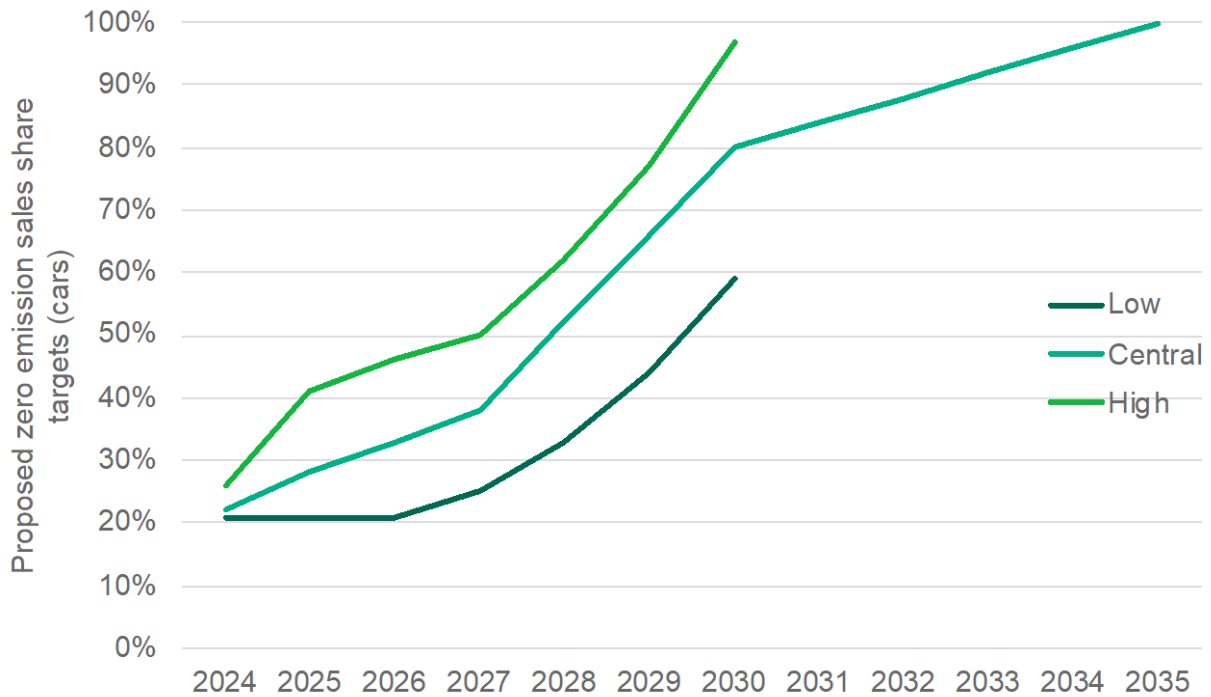


Figure 7. Proposed low, central, and high trajectories for ZEV car sales

**2.18 Question 3: Do you agree or disagree with the proposal for the central trajectory for new zero emission cars set out in Table 1?**

**Annual zero emission sales targets for new vans**

2.19 The zero emission van market is less mature and lags the zero emission car market in the UK and globally. However, sales are now growing increasingly rapidly with many new models coming to market. Because of vans’ higher annual mileage (approximately 13,000 vs 7,400) and fuel consumption per mile, zero emission vans have the potential to accrue fuel and maintenance savings quicker than zero emission cars. Therefore, vans are increasingly at total cost of ownership parity for many drivers in the UK when including the plug-in van grant and could be more cost-effective on a total cost of ownership basis without subsidies in many cases in the mid-2020s.

2.20 In light of these dynamics, the proposed trajectory for vans is initially lower than for cars, but the targets increase over the decade on the path toward 100% in 2035. This proposed minimum trajectory is higher than that in the technical consultation. This

reflects feedback from a wide range of stakeholders which indicated that higher van targets were preferred and feasible. It also reflects that, in contrast to the car market, plug-in hybrids (PHEVs) account for a very small share of the van market today and there are few additional PHEV models announced for coming years. Higher ZEV shares are therefore required to drive decarbonisation in the 2024-2030 period.

Table 2. Annual targets for ZEV sales shares from 2024-2035 for vans

<b>Year</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>
Target	10%	19%	22%	34%	46%	58%
<b>Year</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>	<b>2033</b>	<b>2034</b>	<b>2035</b>
Target	70%	76%*	82%*	88%*	94%*	100%*

\*Target will be legally adopted in a future policy

2.21 As with cars, additional target trajectories corresponding to the high and low scenarios were considered for the van segment out to 2030. The low scenario would reach 38% ZEV sales share in 2030, while the high scenario would reach 80%. Figure 8 shows the considered low, central and high trajectories for the van segment. The central scenario is equivalent to the proposed targets in Table 2 above.

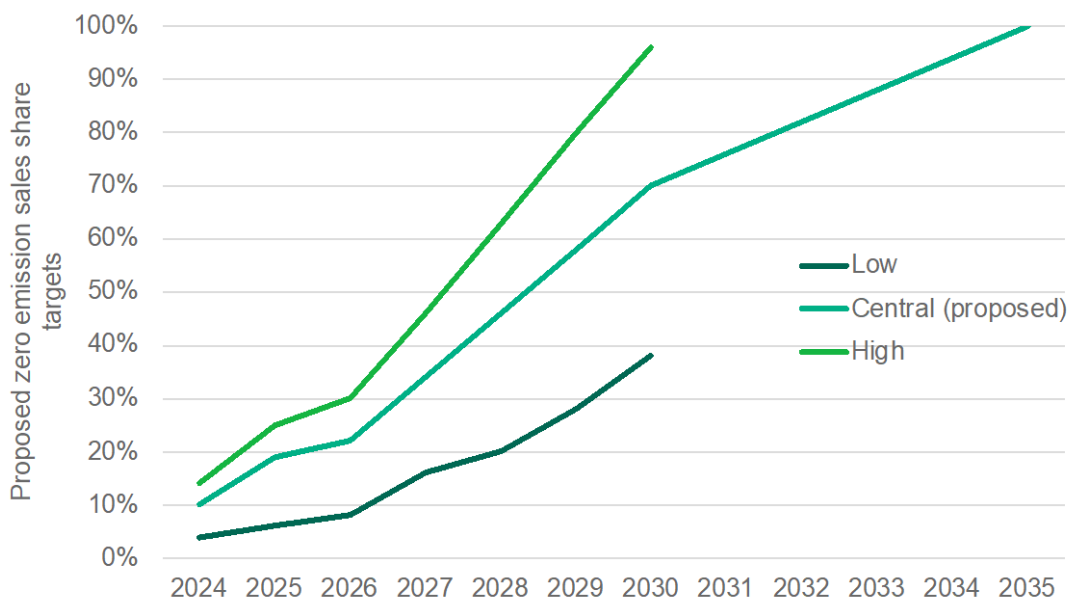


Figure 8. Proposed low, central and high ZEV trajectories for new van sales

**2.22 Question 4: Do you agree or disagree with the proposal for the central trajectory for new zero emission vans set out in Table 2?**

2.23 For completeness, Figure 9 summarises the proposed (central) trajectories for cars (dark green) and for vans (light green) on a single chart. The solid lines from 2024–2030 indicate the extent of this regulation; the dashed lines indicate envisaged targets to be officially adopted in a later regulation.



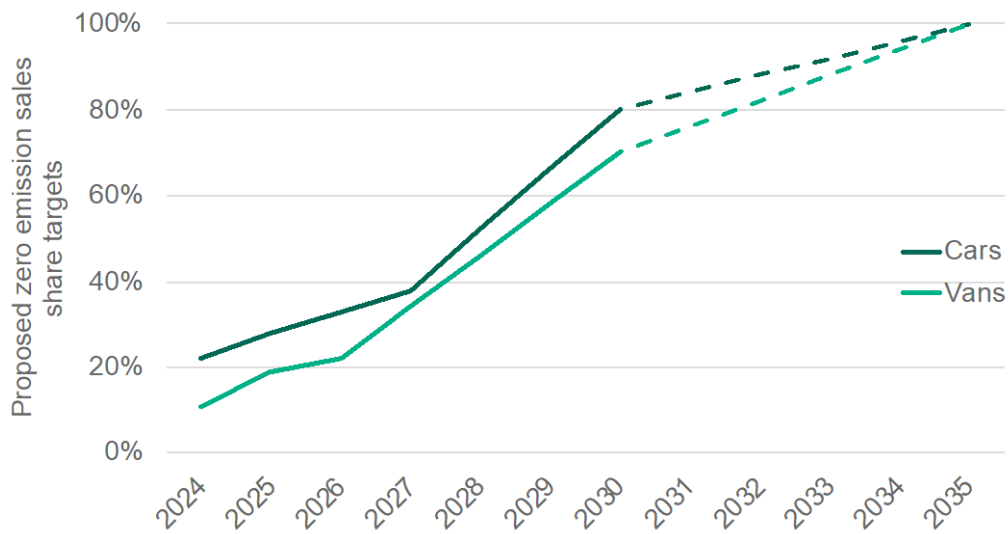


Figure 9. Proposed annual ZEV targets from 2024-2035 for new cars and vans.

## Applicability of the ZEV mandate

2.24 The mandate will apply to new cars, or M1 vehicles as type approved in the UK, and light goods vehicles (vans), known as N1 vehicles under type approval. It will also apply to light goods vehicles of category N2 under type approval that weigh less than 4,250 kg, provided the vehicle is zero emission. This is to recognise that the weight limit of 3,500 kg that applies to N1 vehicles is difficult to achieve when factoring the additional weight of a zero emission drivetrain compared to an internal combustion engine combined with retaining the same usable payload space/weight in the vehicle.

2.25 The car and van schemes will operate separately: allowances and credits under the car/M1 system cannot be used to cover activity in the van/N1 and ZEV N2 system and vice versa.

2.26 Vehicles are considered new if they are initially registered in the UK or are imported from another market within 3 months of their initial registration. If a vehicle leaves the UK within 3 months of its initial registration, it is considered out of scope and is not eligible to earn a ZEV credit.

## Derogations

2.27 Most new cars and vans in the United Kingdom are manufactured by large manufacturers. In 2019, over 90% of new cars sold in the UK were made by the 20 most popular manufacturers (some of which were part of larger connected entities).<sup>21</sup> For vans, the market was even more concentrated, with 11 manufacturers representing 95% of sales. The ZEV mandate is designed to encourage these mass manufacturers to progressively introduce new zero emission models and sell those at scale in the UK.

<sup>21</sup> Source: <https://www.eea.europa.eu/data-and-maps/data/co2-cars-emission-20>

- 2.28 In contrast, there are many smaller manufacturers who produce only one or a small number of models in small volumes for niche markets. These manufacturers typically have lower budgets for research and development and less flexibility to change their production plans, and could be expected to be affected proportionately more in the transition to ZEVs due to lower ability to spread the fixed costs. At the same time, it is important for all manufacturers to play a role in shifting to a fully zero emission car and van fleet. Therefore, we intend to provide derogations to smaller manufacturers, while maintaining the overall targets set out by government for 2030 and 2035.
- 2.29 To facilitate fair competitiveness and minimise barriers to entry in the market, manufacturers selling fewer than 2,500 cars or vans per year may be considered small volume manufacturers (SVMs). SVMs will not be subject to ZEV targets under this regulation for years 2024–2029. To facilitate this, SVMs will receive allowances for each car or van sold (up to 2,499) each year, which can each be used to cover the sale of a non-ZEV. If the SVM does sell ZEVs, they would have allowances remaining, which could then be traded to another manufacturer.
- 2.30 For each trading period, government will identify the smallest manufacturers — those selling fewer than 1,000 cars or vans per year, which we term micro volume manufacturers (MVMs) — and apply the derogation. These manufacturers will not need to apply and will receive the derogation automatically. Manufacturers selling at least 1,000 cars or vans but fewer than 2,500 may apply for a SVM derogation. To receive the derogation, a manufacturer must submit to the government a derogation application form, formally applying for the derogation and providing information on the vehicles and CO<sub>2</sub> emissions of the vehicles that they intend to bring to market in future years, in line with retained requirements currently in force in the UK. This application form must be submitted no later than 30 April of the following year and further guidance will be issued in mid-2023. The end of petrol and diesel engine vehicle UK sales in 2030 will still apply to both micro volume and small volume manufacturers.
- 2.31 If a manufacturer is a SVM in one year and then sells at least 2,500 cars the following year, they will retain a derogation for that one year only, as a transitional period, but will subsequently be ineligible for any additional transitional years (although may qualify for the SVM derogation if their sales volumes subsequently fall). During that one-year transitional period, the manufacturer would receive the maximum of either 2,499 allowances, or the number of allowances as would be calculated for a major manufacturer based on the annual ZEV target.
- 2.32 If a derogated manufacturer has banked any allowances from previous trading periods, those may be retained after the derogation has lapsed and used to meet future targets.
- 2.33 Any manufacturer selling at least 2,500 cars or vans in a year is considered a major volume manufacturer and must meet the targets described above.
- 2.34 Derogations will operate separately for the car and van schemes; a manufacturer may have a micro volume derogation under one scheme but be a major manufacturer with a ZEV target under the other scheme.
- 2.35 Some examples are:

- Manufacturer X sells 1,300 cars in 2024, so they may qualify for an SVM derogation under the car scheme. They must submit a derogation application form to the scheme administrator by 30 April 2025.

- Manufacturer Y sells 2,100 cars in 2024, 2,600 cars in 2025 and 2,600 cars in 2026. They may receive a SVM derogation in 2024 (subject to submitting a derogation application form) and would receive 2,100 allowances. In 2025, they would have a 1-year transitional period and would receive 2,499 allowances (as this is more than the  $72\% \times 2,600 = 1,872$  allowances that they would receive using the major manufacturer method). In 2026, they would not be eligible for a derogation and would be allocated 1,742 allowances for non-ZEVs (67% of their sales).

**2.36 Question 5: Do you agree or disagree that the proposed derogations (thresholds and adapted trajectories) strike an appropriate balance between supporting small volume manufacturers while also ensuring that all manufacturers play a part in the transition to ZEVs?**

**Closed pooling**

2.37 By default, every entity that obtains type approval for a particular vehicle model and then registers at least 1 car or van for use on a UK road is a participant in the ZEV mandate. Each participant faces a separate compliance target, receives allowances, and earns credits independently. In some cases, one company may have multiple divisions or brands that each hold type approval for vehicles; each of these would be a separate participant under the default arrangement. For example, although Volkswagen, Audi, Porsche, Bentley and Škoda are all subsidiaries of the Volkswagen Group, they would by default each be separate participants in the ZEV mandate if they register cars or vans in the UK during a trading period, as they are all separate legal entities that handle the approval of their vehicle models separately.

2.38 Manufacturers who are part of larger connected entities<sup>22</sup> may develop technology and production plans as a group and may find it more convenient to plan for and earn credits towards a common target under the ZEV mandate. In this case, these manufacturers may choose to form a closed pool and be treated as a single participant. This decision must be made on an annual basis.

2.39 To form a closed pool for compliance for a trading period (e.g., for vehicle sales in 2024), all manufacturers within that pool must submit an application to the scheme administrator at any point within that year (e.g., calendar year 2024) or by 30 April of the following year including documentation that the manufacturers are connected entities, i.e. they are a part of the same wider group. Companies may decide each year whether each manufacturer within the wider group is included within the pool or is treated as a separate participant; for example, a manufacturer with very few sales within a much larger group may be excluded from a pool to receive a derogation.

2.40 If a manufacturer is purchased by another company midway through a given year, the connected entities may choose whether to pool for that year or remain separate but may not pool only for part of the year. Inversely, if a manufacturer separates from

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<sup>22</sup> Connected Entities are defined by s. 993-994 of the Income Tax Act 2007 and s. 1122-1123 of the Corporation Tax Act 2010.

a connected entity partway through a year, it may not participate in a pool with that connected entity for that year (and would instead participate individually or with its new connected entity, if applicable).

- 2.41 Manufacturers who are not a part of the same group may not form a pool together. These manufacturers may trade allowances with one another at any price.

### **Treatment of special purpose vehicles (SPVs)**

- 2.42 The majority of eligible vehicles in the M1, N1 and N2 categories are cars and vans that are sold directly to customers in their original form through the standard type approval process. Shifting these vehicles to ZEVs is the core objective of this policy.

- 2.43 Current UK CO<sub>2</sub> emissions regulations exempt several categories of vehicles which perform a specific function and are typically modified from their original form with specialised equipment or body work. These excluded categories are collectively referred to as special purpose vehicles (SPVs).<sup>23</sup> These vehicles generally do not generally use standard type approval schemes, but rather use multi-stage, small-series or individual type approval, and receive a special categorisation compared to 'mainstream' vehicles.

- 2.44 Because of the small volumes and inherent customisation associated with these vehicles, there are currently few or no ZEV options available for most of these categories. Converting ICE variants of these vehicles to become zero emissions may be very costly or infeasible due to high auxiliary power consumption or body modifications.

- 2.45 We propose that SPVs are excluded from the scope of the ZEV mandate, i.e., producing an ICE version of one of these SPVs would not use an allowance, nor would it be included in the registrations figures for calculating the number of allowances a manufacturer receives. If, however, a manufacturer produces a ZEV within one of these categories, given the emissions reductions that such a vehicle would create, the manufacturer would earn 1 ZEV credit within the respective scheme, which can be used to offset one unit of activity (i.e., the sale of a non-ZEV vehicle). We intend for this provision to spur the development of ZEV models for these vehicles which will be necessary to fully decarbonise road transport.

- 2.46 We propose that wheelchair accessible vehicles (WAVs) also be excluded from the scope of the ZEV mandate but be covered by additional provisions to incentivise availability of ZEVs in this segment, described in section 2.95.

- 2.47 Some categories of SPVs, such as camper vans and hearses, may be easier to manufacture as ZEVs than others, and even have ZEV versions on the market in 2023. We will carefully monitor market conditions and if it becomes clear that certain categories of SPVs can feasibly and economically be produced as ZEVs, they may be brought within the scope of the mandate.

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<sup>23</sup> Note: These categories are laid out in legislation at the following source:  
<https://www.legislation.gov.uk/eudr/2007/46/annex/II/adopted>

**2.48 Question 6: Do you agree or disagree with these proposals for the inclusion or exclusion of SPVs? If you disagree, please state your reasons for specific SPV categories.**

**Additional provisions on ZEV eligibility**

- 2.49 Vehicles using individual type approval (IVA) or national small series (NSS) type approval pathways are in the scope of the ZEV mandate, provided that these vehicles do not belong to an SPV category.
- 2.50 Kit cars, or vehicles purchased as a set of components to be assembled by the buyer, are within the scope of the ZEV mandate if they are new vehicles which go through the type approval process (including individual type approval). Kit cars which are of mixed or indeterminate age (i.e., those having a “Q” registration plate) are not in scope.
- 2.51 In practice, those obtaining type approval for new kit cars would likely be considered SVMs or MVMs registering fewer than 2,500 vehicles and receive an automatic derogation and no ZEV target to 2029. If the manufacturer produces a kit car which meets ZEV requirements, they would have an extra allowance which could be traded to other manufacturers.

**Trading**

- 2.52 Following the awarding of allowances for non-zero emission cars and vans, allowances may be traded among manufacturers. Trades may only take place between participants in the scheme; entities who do not register vehicles in the UK are not eligible to purchase or sell allowances.
- 2.53 Similarly, manufacturers who earn credits for the sale of zero emission SPVs or the sale of ZEVs into car clubs (described at paragraph 2.83) may also trade these credits to other participants.
- 2.54 There are no conditions on the prices attached to trading allowances or credits; they may be traded for free or for any amount of money. In practice, it is anticipated that allowances or credits will not be sold for greater than the payment price (see paragraph 2.104).
- 2.55 Manufacturers must notify the scheme administrator of trades they have conducted. This notification must include the number of allowances/credits purchased and the price paid per allowance/credit. Following the close of the trading period, the scheme administrator will publish information on the net number of allowances/credits each participant has added or lost in the trading period, but not the amounts paid nor the amounts of allowances/credits included in specific trades.

**Flexibility mechanisms for ZEV sales targets**

- 2.56 The ZEV mandate will cut carbon emissions and support a competitive and healthy automotive sector. Due to the novel nature of this regulation and the multi-year

product planning cycles typical in the automotive industry, some manufacturers may face challenges in producing sufficient ZEVs to meet the targets in the initial years. This was clearly expressed in feedback to the Green Paper and the Technical Consultation. To that end, we propose that the ZEV mandate provide additional flexibility for manufacturers during the initial three years of the mandate (2024-2026) by allowing them to meet their targets in individual years with unused allowance from previous years (banking) or from future years (borrowing).

## Banking

- 2.57 As described above, allocations of allowances to cover the sale of non-ZEVs will be made following the end of each calendar year for an amount equivalent to manufacturer's sales\*(100%–target percentage), separately for both the car and van schemes. If not used in that trading period, those allowances may be banked for future use in the same component of the scheme. There is no limit on the number of banked allowances from previous trading periods which can be used to meet compliance in any given trading period, but banked allowances may only be used after a manufacturer's allowances from that year have been used. This flexibility acknowledges the benefits of early reductions in carbon emissions from deploying ZEVs onto UK roads more quickly.
- 2.58 An allowance may be banked for 3 years after the year in which it is allocated. If the allowance has not been used by that point, it will expire and will have no value. For example, an allowance originally allocated for 2024, if not used in that year, may be banked for use to cover a non-ZEV sold in 2025, 2026 or 2027. If it has still not been used following the conclusion of the 2027 compliance period, it will expire and may not be used in future years. Banked allowances may be traded but will retain the same expiration date.
- 2.59 In contrast, credits awarded for zero emission SPVs or bonus categories (discussed below) may only be used in the year in which they are awarded.
- 2.60 Example: Suppose that Manufacturer X sells 100,000 cars in 2024; that manufacturer would receive 78,000 allowances for non-ZEV cars. If the manufacturer sells 23,000 ZEV cars, they would use 77,000 allowances, leaving 1,000 allowances to be banked for future use. These 1,000 allowances will expire if not used to comply with the 2025, 2026 or 2027 targets.
- 2.61 **Question 7: Do you agree or disagree with the proposals for banking during the 2024-2030 period?**

## Borrowing

- 2.62 Manufacturers who cannot achieve compliance in a trading period using allowances from that trading period or previous periods may choose to borrow allowances from a future trading period. In contrast to banking, borrowing allowances from future years presents a risk of reduced carbon savings in the initial years of the scheme. Given this, we propose that borrowing from future allowances is constrained by a cap on

the number of allowances which can be borrowed in any trading period and an interest rate for borrowed allowances.

2.63 We propose the number of allowances that can be borrowed during any trading period is capped at 75% of the ZEV credit target in 2024, 50% in 2025, and 25% in 2026. There will be separate caps for cars and vans. Table 3 provides the fractions of ZEV target trajectories which may be borrowed in each year for cars and for vans and the remaining shares which must be met in-year through selling ZEVs, earning bonus credits or trading.

Table 3. Share of ZEV credit targets which may be borrowed from future years in 2024-2026 for cars and vans

		2024	2025	2026	2027
Borrowable fraction of trajectory		75%	50%	25%	0%
Cars	ZEV trajectory	22%	28%	33%	38%
	Borrowable allowance share	16.5%	14%	8.3%	0%
	Minimum in-year compliance*	5.5%	14%	24.8%	38%**
Vans	ZEV trajectory	10%	18%	22%	33%
	Borrowable allowances share	7.5%	9%	5.5%	0%
	Minimum in-year compliance*	2.5%	9%	16.5%	33%**

\*May be met through earning credits from selling ZEVs, bonus credits or trading

\*\*In addition to the repayment of any deficit accrued from borrowing in 2024-2026

2.64 A manufacturer's allowance deficit is multiplied by 1.035 each year that it is not repaid, acting as a 3.5% compounding interest rate. 3.5% mirrors HM Treasury's social time preference rate — how much society prefers something today versus next year. This is intended to reflect the lost environmental benefit to society of delaying the deployment of a ZEV in a given year.

2.65 Beginning in the 2027 trading period, no borrowing from future years is allowed. Any allowance deficit carried forward from 2026 must be repaid with allowances from the 2027 trading period (including through trading) or the participant must make a payment to the government.

2.66 Table 4 illustrates how a manufacturer could maximise borrowing flexibility in the 2024–2027 period under these proposals. In this scenario, manufacturer X sells 100,000 cars in each year, 2024–2027, and chooses to borrow the maximum share of allowances shown in Table 3. This results in a total deficit of 41,830 allowances by the end of 2026. In 2027, no additional borrowing is permitted, and the allowance deficit must be repaid, creating an in-year target of 79,830 to be filled by allowances (including those purchased through trading) or credits (discussed below). If the manufacturer is unable to meet this target in 2027, they must make a payment proportional to the gap (discussed below).

Table 4. Illustration of compliance scenario with maximum borrowing for hypothetical manufacturer selling 100,000 cars annually

	2024	2025	2026	2027
Sales	100,000	100,000	100,000	100,000
ZEV sales	5,500	14,000	24,750	79,830
Non-ZEV sales	93,500	86,000	75,250	20,170
In-year allowances allocated	78,000	72,000	67,000	62,000
Borrowed allowances (maximum allowed)	16,500	14,000	8,250	0
Deficit (including interest)	17,078	32,165	41,830	0

**2.67 Question 8: Do you agree with the proposed provisions for borrowing in the 2024–2026 period? If you disagree with the proposal, please provide alternative options and your rationale.**

## Minimum requirements for ZEVs

2.68 For a vehicle to qualify as a ZEV, and therefore to be exempted from the calculation of a participant’s activity, the vehicle must meet a minimum set of requirements.

These are intended to maximise the emissions reduction potential of this policy and ensure a positive user experience while also allowing ample opportunity for industry to innovate on product offerings to meet consumer preference.

2.69 The technical consultation presented a “long list” of potential criteria. Most feedback emphasised the importance of a simple system with minimal criteria, therefore encouraging greater consumer choice and industry innovation. We propose to limit the definition of a qualifying ZEV to only 3 factors: emissions limits, minimum range, and warranty requirements. Unless otherwise stated, these requirements would apply both to cars and vans.

2.70 A zero emission vehicle would be defined as a vehicle which emits no greenhouse gases from the exhaust. Specifically, the vehicle must have 0 g/km CO<sub>2</sub> according to the Worldwide Harmonized Light Vehicles Test Procedure (WLTP) and also not have any emissions of any other targeted gases under the Climate Change Act of 2008. Although ZEVs contribute to air pollution through tyre and brake wear (as do conventional and hybrid vehicles), those emissions are out of scope of this regulation. This could include battery electric vehicles (BEVs) and hydrogen fuel cell vehicles (FCEVs).



- 2.71 To qualify as a ZEV, we propose that the vehicle must have an operational range of at least 120 miles according to the WLTP test cycle.<sup>24</sup> Over 95% of ZEVs sold in the UK in 2021 had a WLTP range over 120 miles. Consumers currently appear to prefer vehicles with a longer range, but there is a market for a lower-cost ZEVs with a shorter range and we expect consumer tastes to change over time as the UK's charging infrastructure develops. However, given potential for battery degradation over time, this regulation will contribute towards more minimum viable ranges for the second-hand market. In the case of multi-stage vehicles, this minimum range criterion will be assessed based on the base vehicle.
- 2.72 The final proposed criterion to qualify as a ZEV is that manufacturers must provide a warranty for the vehicle to ensure that they will provide a positive experience for consumers. In particular, because core zero emission technologies are rapidly evolving and many consumers are unfamiliar with the technologies, a longer warranty on these components is appropriate. Therefore, the following warranty requirements are suggested:
- A minimum of 8 years or 100,000 miles (whichever comes first) for traction batteries, hydrogen fuel cell stacks, and hydrogen tanks.
  - For battery electric vehicles, the warranty must provide for replacement of the traction battery if it falls below 70% capacity during the covered period.
  - A minimum of 3 years or 60,000 miles (whichever comes first) for the remainder of the vehicle.
- 2.73 The vast majority of ZEVs sold in the UK in 2021 already have warranties meeting or exceeding these criteria. These requirements are proposed to ensure a more reliable ZEV owner experience across models.
- 2.74 Any vehicle meeting the above requirements would not be counted toward the manufacturer's activity. Any vehicle which does not meet the above requirements (and is also not an SPV) would be counted as a non-ZEV and would use one ZEV allowance.
- 2.75 It is further proposed that these same minimum requirements also apply for a zero emission SPV to earn a credit.
- 2.76 The transition to battery electric vehicles will require investment in the UK's electricity network but also represents an opportunity. While managed charging (one-way smart charging) is possible today further to the Electric Vehicle Smart Charge Points regulations adopted in 2021<sup>25</sup> and brings many benefits, further benefits for the grid

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<sup>24</sup> The estimates of electric driving range under the WLTP cycle generally represent a "best case" range under optimal conditions. Real-world range varies according to a number of factors like external temperature, driving speed and style, and weight of cargo and passengers in the vehicle. Real-world ranges are typically 10%-30% below WLTP ranges; therefore, a 120 mile WLTP requirement would translate into a real-world driving range of approximately 95 miles.

Source: <https://www.drive-electric.co.uk/guides/general/electric-vehicle-range-everything-you-need-to-know/>

<sup>25</sup> These regulations are available at <https://www.gov.uk/guidance/regulations-electric-vehicle-smart-charge-points>

and for drivers are possible with bi-directional charging. This capability is offered on only a few vehicles today, and the regulatory frameworks are not yet in place to fully make use of this capability on a large scale, but costs for the underlying components are quickly falling and the UK Government would like to encourage bidirectional charging for future vehicles.

- 2.77 We propose that this regulation does not require bidirectional charging capability at the vehicle (e.g., a bidirectional inverter allowing bidirectional charging at an AC charge point) at this point. However, this capability may be required as part of the definition of a qualifying ZEV in future years if there is a market failure identified in this area.
- 2.78 The technical consultation listed requirements for battery sourcing, labelling, and sustainability measures as a criterion for being counted as a ZEV. Ensuring the sustainability and recyclability of ZEV batteries is critical not only to maximise climate benefits but also to prevent critical mineral shortages from derailing the transition to ZEVs.
- 2.79 The UK and other governments are taking action to reduce the negative social and environmental consequences of batteries and ensure recycling. The Faraday Institution has conducted research into battery recycling and novel chemistries that reduce reliance on volatile chemistries. The Critical Minerals Strategy published in 2022 identifies battery and mineral recycling as a key priority for investment. The European Union has adopted a comprehensive battery directive with labelling requirements, content specifications, and minimum requirements for the use of recycled content.<sup>26</sup> Manufacturers may also follow these requirements for vehicles destined for the UK market.
- 2.80 Because of the rapid development and innovation around electric vehicle batteries and the other policies which influence this space, we do not propose to place requirements on battery manufacturing, labelling or recycling within the ZEV mandate at this point. However, additional requirements may be added to the definition of a qualifying ZEV in future years if it becomes clear that additional policy intervention is required.
- 2.81 **Question 9: What are your views on the proposed minimum requirements for ZEVs (emissions, minimum range and warranty)?**
- 2.82 **Question 10: Are there additional minimum requirements that should be added to the regulation (in the first year or at a later point)? Please provide your rationale.**

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<sup>26</sup> Source: [https://environment.ec.europa.eu/topics/waste-and-recycling/batteries-and-accumulators\\_en](https://environment.ec.europa.eu/topics/waste-and-recycling/batteries-and-accumulators_en)

## Opportunities for additional credits

### Additional credits for ZEVs used in car clubs

- 2.83 Most cars in the United Kingdom are privately owned for individual use and are parked about 96% of the time.<sup>27</sup> Beyond exhaust emissions which can be eliminated by ZEVs, private cars create numerous externalities, including congestion and the loss of public space for roadways and parking. Car clubs have the potential to mitigate some of the social and economic impacts of car ownership by enabling cars to be used more efficiently and make it easier for people who do not need or wish to own a car, but who may need or wish to have occasional access to a car.
- 2.84 Car clubs have grown steadily in the UK, reaching over 5,800 vehicles and 784,000 members in 2021. However, the rate of car club adoption lags far behind other countries like Germany and the Netherlands. About 12% of car club vehicles in the UK were zero emission as of the end of 2021.<sup>28</sup>
- 2.85 There is strong evidence that car clubs reduce private car ownership, with a shared vehicle substituting between 3 and 20 private vehicles.<sup>29</sup> Compared to a personal ownership model, efficient use of shared vehicles can reduce emissions associated with the manufacturing of vehicles. This is especially important for electric vehicles, a majority of lifecycle emissions from which come from the manufacturing of batteries.<sup>30</sup> Furthermore, drivers who switch from owning a car to using car clubs tend to travel fewer miles overall in cars. Both of these dynamics reduce greenhouse gas emissions.
- 2.86 Combining ZEVs with car clubs can create emergent social benefits. Because many people use each car club vehicle, car clubs could serve as an opportunity for many customers to experience ZEVs for the first time and gain comfort with the technology. Early experience from car clubs in the UK paints a positive picture: 28% of car club members surveyed had tried a BEV, and 84% of experiences were positive.<sup>31</sup> International research indicates that first-hand experience with ZEVs increases positive perceptions of the technology and interest in purchasing a ZEV in the future.

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<sup>27</sup> Source: <https://www.racfoundation.org/media-centre/cars-parked-23-hours-a-day>

<sup>28</sup> Source: CoMoUK. Car Club Annual Report United Kingdom 2021.

<https://www.como.org.uk/documents/car-club-annual-report-uk-2021>

<sup>29</sup> Hansjörg, Lukas Ewald, Dominik Frankenhauser, Axel Ensslen, and Patrick Jochem. (2019). "A Study on Free-Floating Carsharing in Europe: Impacts of car2go and DriveNow on Modal Shift, Vehicle Ownership, Vehicle Kilometers Traveled, and CO<sub>2</sub> Emissions in 11 European Cities." Working Paper Series in Production and Energy. Karlsruhe Institute of Technology (KIT), Institute for Industrial Production (IIP). <https://ideas.repec.org/p/zbw/kitiip/36.html>; 6t and ADEME, "L'autopartage en trace directe: quelle alternative à la voiture particulière? [Direct-track carsharing: what alternative to the private car?]" Retrieved from <https://bibliographie.ademe.fr/mobilite-et-transport/2898-enquete-sur-l-autopartage-en-trace-directe.html>; CoMoUK. Car Club Annual Report United Kingdom 2021.

<https://www.como.org.uk/documents/car-club-annual-report-uk-2021>

<sup>30</sup> Source:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/106260/3/lifecycle-analysis-of-UK-road-vehicles.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/106260/3/lifecycle-analysis-of-UK-road-vehicles.pdf)

<sup>31</sup> Source: CoMoUK. Car Club Annual Report United Kingdom 2021.

<https://www.como.org.uk/documents/car-club-annual-report-uk-2021>

- 2.87 Car clubs generally have very low fixed membership costs, enabling those who only need infrequent access to a car to save substantial money. Car clubs also do not require upfront investment for a car down payment, making them more accessible for a larger number of drivers; this is especially appealing as an alternative to ZEVs given their higher upfront cost. Car clubs could be an important avenue to make ZEVs more accessible to all, and to those in urban areas with no off-street parking.
- 2.88 The ZEV mandate is an opportunity to further increase the emissions reductions benefits of car clubs and broaden access to ZEVs. Considering these benefits, we propose that ZEVs sold to car clubs earn 0.5 ZEV credits. These credits may be earned in either the car or van schemes depending on the vehicles being sold to a car club. These ZEVs must meet the same minimum requirements as described above.
- 2.89 Each manufacturer (including those receiving derogations) may earn additional credits for ZEVs sold to car clubs equivalent to 5% of their total sales of cars and vans in a given year. For example, if Manufacturer X sells 100,000 cars and 10,000 vans in 2024, they may earn extra credits for up to 5,000 zero emission cars sold to car clubs (earning 2,500 credits in the car scheme) and 500 zero emission vans sold to car clubs (earning 250 credits in the van scheme). Manufacturers may sell additional ZEVs beyond these limits to car clubs, but they would not receive any credits for these vehicles.
- 2.90 To receive the credits, the car club purchasing a ZEV must meet certain criteria. These requirements to be an eligible car club will be set out by the scheme administrator ahead of 1 January 2024. At this stage, we expect these to reflect closely the relevant criteria set out by CoMoUK.<sup>32</sup>
- 2.91 A ZEV receiving credits under this scheme must be used in a car club scheme for a minimum of 2 years. This will prevent ZEVs from earning extra credits under this scheme before being quickly resold on the secondary market and jeopardising the car club benefits they offer. As one of the requirements to be an eligible car club, at the end of each year, car clubs participating in this scheme must provide a list of the ZEVs in operation which have received bonus credits, including their duration of operation, mileage and number of trips.
- 2.92 A valid explanation must be provided for any ZEVs which leave a car club's fleet before the 2-year threshold is completed. This could include vehicles which are deemed undriveable because of an accident or technical failure and cannot be repaired. If explanations for ZEVs that leave the fleet are not provided, or a false representation of the reason for a ZEV leaving the fleet has been given or if the explanation for a ZEV leaving the fleet is deemed insufficient and the manufacturer who received the credit will be assessed 0.5 additional activity in the next trading period, which must be covered by an allowance or offset by a credit. Consideration will also be given as to whether the car club in question remains compliant with the relevant car club provisions in future years, potentially impacting on the award of car club credits to relevant vehicles and manufacturers.

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<sup>32</sup> Accreditation criteria developed by CoMoUK are available here: [https://uploads-ssl.webflow.com/60f6952e8542ba18aa258546/62f66f9abab2af9ee860e9ed\\_CoMoUK%20Car%20Club%20Accreditation%20Criteria%202022.pdf](https://uploads-ssl.webflow.com/60f6952e8542ba18aa258546/62f66f9abab2af9ee860e9ed_CoMoUK%20Car%20Club%20Accreditation%20Criteria%202022.pdf)

2.93 ZEVs under this scheme may be sold to another eligible car club; in that case, the remainder of the 2-year responsibility will be transferred to the new operator.

2.94 **Question 11: Do you agree or disagree with the proposal to provide additional credits to ZEVs used in car clubs? Are there any additional criteria or provisions that can increase the effectiveness of these incentives? Please explain your reasoning.**

### **Additional credits for ZEVs used as wheelchair accessible vehicles**

2.95 Vehicles are critical for enabling freedom of mobility; however, traditional vehicles may not be accessible or usable by those with disabilities, such as individuals who use wheelchairs. To remedy this problem, vehicles (typically vans) may be modified to become wheelchair accessible vehicles (WAVs) with features such as ramps and customised safety designs. The UK Government supports access to WAVs and other mobility solutions in partnership with Motability, a scheme which matches individuals with accessible vehicles that fit their needs and provides ongoing supportive services. Because they are derived from vans, WAVs tend to have higher fuel consumption and therefore higher emissions than typical M1 vehicles, indicating the importance of transitioning these vehicles to zero emissions.

2.96 Although zero emission WAVs have been produced in small volumes, converters may face some additional challenges in adapting ZEVs to be wheelchair accessible, such as a limited selection of electric van models, limited availability of those models and the need for new designs to accommodate batteries and other components.

2.97 Despite these challenges, government intends to make ZEVs and their benefits, including cleaner air and lower operating costs, accessible to all, including people with disabilities, and wants to encourage greater use of zero emission WAVs.

2.98 We propose any ZEV converted to a WAV receives an additional 0.5 credits, beyond the 1 credit which a zero emission SPV would already receive, to reflect the emissions reductions they would bring. In cases where the WAV is a multi-stage vehicle, this bonus credit would be awarded in the scheme corresponding to the type-approval category of the base vehicle.

2.99 To earn this bonus credit, the vehicle must be identified as a WAV on the certificate of conformity. This bonus credit will be awarded to the producer of the original vehicle (i.e., the entity responsible for the initial type approval before modifications), following the conversion of the ZEV to a WAV and final type approval. Manufacturers receiving derogations may also earn credits for zero emission WAVs.

2.100 **Question 12: Is the proposed incentive mechanism an appropriate and beneficial way to support the development of zero emission WAVs?**

### **Payments for non-compliance with annual ZEV targets**

2.101 A manufacturer may achieve annual compliance (i.e., cover all of their activity) through a combination of in-year allowances, banked or borrowed allowances, credits earned for the sale of zero emission SPVs or ZEVs sold to car clubs, and allowances

purchased through trading. If the manufacturer is still unable to meet compliance for the trading period through all of those means, they must make a payment to government proportionate to the amount of activity not covered by allowances or credits.

2.102 Other ZEV mandates use fines to ensure compliance, although the details vary.

Table 5 lists the penalties associated with non-compliance with the ZEV mandates in California (also in use in 15 other U.S. states), the provinces of British Columbia and Québec in Canada, and China. Under the existing regulations in California and the Canadian provinces, a credit deficit accrues a fine of \$5,000 in the local currencies; however, because each ZEV may earn up to 4 credits, this is equivalent to \$20,000 per ZEV not sold. The new California regulation (entering into force in 2026) and the proposed new regulation in Québec would simplify this system with fines of \$20,000 per missing ZEV. Notably, the systems in California and Canada do not satisfy one’s compliance obligation: on top of the fine, the manufacturers must earn an additional credit in the following year to restore compliance.

**Table 5. International examples of penalties for non-compliance with ZEV mandate targets**

Jurisdiction	Typical penalty per vehicle <sup>33</sup>
California (updated)	USD \$20,000 (£16,526) per ZEV deficit
China (dual credit)	No financial penalty specified; government will not provide
Québec	CAD \$20,000 (£12,141) (CAD \$5,000 per credit, typically 4
British Columbia	CAD \$20,000 (£12,141) (CAD \$5,000 per credit, typically 4

2.103 Payments within the ZEV mandate should be priced to reflect at least three criteria:

a) they must be greater than the additional cost to produce a ZEV compared to a comparable conventional ICE vehicle, in order to discourage manufacturers from making payments rather than producing ZEVs; b) they must reflect the price of the excess carbon emissions that would result from selling an ICE vehicle rather than a ZEV, in accordance to cross government carbon valuation guidance; and c) they must be at least as high as the equivalent fines for non-compliance in other markets where there is significant automotive trade with the UK.

2.104 Accounting for these three criteria and international best practice, we propose payments of £15,000 per excess activity in the car scheme and £18,000 per excess activity in the van scheme.

2.105 As an example, suppose that Manufacturer X sells 100,000 cars in 2025, 12,000 of which are qualifying ZEVs. They are awarded 72,000 allowances and choose to borrow 14,000 additional allowances from future years. In this example the manufacturer does not sell any SPVs or sell any ZEVs to car clubs. The

<sup>33</sup> Conversion to British Pound based on market average exchange rates as of February 28, 2023

manufacturer chooses not to purchase any allowances from other manufacturers through trading. Therefore, the manufacturer has an excess activity of:

$$(100,000 - 12,000) - 72,000 - 14,000 = 2,000$$

And must make a payment of:

$$£15,000 \times 2,000 = £30,000,000.$$

2.106 Government will issue a notice of compliance shortfall within 1 month of the end of the trading period. If the manufacturer believes that there has been an error in calculation or process, they may file an appeal to a first tier tribunal.

2.107 The payment must be paid to the scheme administrator for deposit into the consolidated budget within 2 months of the notice of shortfall, or the decision of the appeal if applicable. If the payment is not paid within this timeframe, the scheme will enable the government to levy additional measures against the manufacturer which might include, but are not necessarily limited to, the issuance of fines.

2.108 **Question 13: What are your views on the proposed payment levels in the ZEV mandate?**

### 3. Regulating emissions from new non-zero emission vehicles

- 3.1 The ZEV mandate will be the primary driver reducing fossil fuel consumption from new cars and vans out to 2035. However, new petrol and diesel cars and vans may still be sold in large volumes in the UK for many years. It is therefore important to ensure that an increase in CO<sub>2</sub> emissions from the conventional petrol and diesel fleet does not outweigh the carbon savings from transitioning to ZEVs.
- 3.2 To accomplish this, this legislation will create CO<sub>2</sub> emissions standards for the non-ZEV portion of the new car and van fleet. Each manufacturer selling new cars or vans in the United Kingdom must ensure that the average CO<sub>2</sub> emissions of their new non-ZEV cars and vans does not exceed a specified threshold each year.

#### Legal framework for the non-ZEV CO<sub>2</sub> emissions standard

- 3.3 The non-ZEV car and van CO<sub>2</sub> emissions trading schemes function alongside, and as part of, the respective ZEV mandate trading schemes in line with the requirements of the Climate Change Act of 2008; this trading scheme is likewise devolved in Northern Ireland, Scotland and Wales. In the proposed UK-wide framework, any manufacturer selling new non-ZEV cars or vans in the UK is a participant in the scheme. There will be separate schemes for cars and for vans; the two schemes will be administered separately and will not interact. To avoid undue complexity, both scheme components will closely mirror the structure of the existing regime for regulating CO<sub>2</sub> emissions from cars and vans.
- 3.4 The regulated activity will be the emissions, measured in grams of CO<sub>2</sub> per km according to the WLTP cycle, for new non-ZEV vehicles (i.e., those vehicles not meeting the minimum technical specifications outlined above). A participant's total activity in a year can be counted as the sum of the CO<sub>2</sub> ratings for each vehicle sold. Savings from approved eco innovations recorded on the certificates of conformity would be subtracted from the manufacturers' activity calculation.
- 3.5 This component of the scheme features allowances for emissions from non-ZEV vehicles. Each manufacturer will receive a g CO<sub>2</sub> per km target each year for both the cars and vans scheme (discussed below). The number of CO<sub>2</sub> allowances allocated to each manufacturer each year will be:



Non-ZEV vehicles sold x g CO<sub>2</sub>/km target

- 3.6 At the end of each year, participants must surrender enough allowances to cover their activity. In other words:

$$\text{Allowances} \geq \text{Activity.}$$

- 3.7 Example: suppose that Manufacturer X sells 80,000 non-ZEV cars in 2024. Manufacturer X has a target of 150 g CO<sub>2</sub>/km. They are therefore allocated  $80,000 \times 150 = 12,000,000$  allowances for 2024.

Suppose that Manufacturer X's 2024 non-ZEV car sales are evenly divided between 2 models, one with a rating of 125 g CO<sub>2</sub>/km and one with a rating of 165 g CO<sub>2</sub>/km. Therefore, Manufacturer X's activity would be measured as:

$$40,000 \times 125 + 40,000 \times 165 = 11,600,000.$$

After using 11,600,000 allowances, Manufacturer X would meet compliance for 2024 in the cars scheme with 400,000 excess allowances.

## Determining a manufacturer's baseline target

- 3.8 Rather than setting annual targets for new vehicles which apply to all manufacturers (subject to weight adjustment), as is done in the current regulation, future CO<sub>2</sub> emissions targets will be determined on a manufacturer's existing non-ZEV sales.
- 3.9 We propose that the baseline targets for 2024, the first year of this framework, would be established according to the CO<sub>2</sub> emissions of new non-ZEV cars and vans sold in 2021. Specifically, this would be the average of the CO<sub>2</sub> emissions (using the WLTP test cycle and subtracting any CO<sub>2</sub> savings from approved eco innovations) of all cars or vans sold by that manufacturer in 2021, excluding all vehicles which received a WLTP CO<sub>2</sub> rating of 0g. Manufacturers who sell both cars and vans in the UK market will have separate targets for each segment.
- 3.10 If a manufacturer fails to achieve their CO<sub>2</sub> emissions target in 2021 and accrues a penalty, then their non-ZEV CO<sub>2</sub> baseline target will be their target in 2021 (after removing any ZEVs sold by that manufacturer) rather than their actual fleetwide average.
- 3.11 2021 was selected as the most appropriate year to serve as a baseline because it represented the last significant increase in stringency of the current regulation, which this new framework seeks to build upon. Although emissions may decline for some manufacturers in 2022 and 2023, this is driven primarily by market forces and business strategy rather than policy. Additionally, because 2022 and 2023 data may not be fully available or finalised by the time this legislation is adopted, they were deemed unsuitable to serve as a baseline year.
- 3.12 Over the course of the regulation, there may be updates to the vehicle testing and certification protocols which could result in a vehicle having a different emissions rating from one year to the next. In such a case, we would propose to re-examine the

baseline targets with an intention to continue to reflect the average emissions from a manufacturer's 2021 non-ZEV fleets.

**3.13 Question 14: What are your views on the proposed methodology to set baseline CO<sub>2</sub> emissions targets for manufacturers?**

## **Non-ZEV CO<sub>2</sub> standard trajectories**

- 3.14 Under the new regulatory framework, the primary objective for manufacturers will be to shift their production to ZEVs. Recognising that manufacturers have limited research and development budgets, this framework does not seek to encourage new investment to significantly increase the efficiency of the non-ZEV fleet. Rather, it seeks to ensure that the fleet does not become less efficient over time, with the risk that this erodes the carbon benefits from the ZEV mandate.
- 3.15 The baseline proposal is therefore for each manufacturer's average CO<sub>2</sub> emissions from their new non-ZEV cars and vans to remain flat across the duration of the regulation (2024-2030 in this stage) relative to their baseline target. We refer to this as the 'flat scenario.'
- 3.16 In contrast to the current regulation, the CO<sub>2</sub> emissions targets would not be adjusted based on changes to average vehicle weight, footprint, or powertrain mix.
- 3.17 CO<sub>2</sub> standards have been successful in reducing the emissions of new vehicles in the UK. Although many manufacturers have met existing regulations by deploying ZEVs (which count as 0 g CO<sub>2</sub> per km under existing standards), the emissions from new non-ZEVs have also declined, owing to higher shares of hybrids and plug-in hybrids and greater deployment of efficiency technologies. The average CO<sub>2</sub> emissions from new non-ZEV cars in the UK was 14% lower in 2021 than in 2019, and 9% lower for new vans. This suggests that even with existing technologies, there is ample opportunity to improve the efficiency of combustion engine vehicles.
- 3.18 Considering this, we also include an alternative scenario, termed the 'tightening scenario,' where the CO<sub>2</sub> emissions target for each manufacturer will decrease by 2% annually in each trading period up to 2030.
- 3.19 On the advice of the Climate Change Committee, we have considered another scenario where manufacturers are encouraged to reverse the increase in size and weight of their non-ZEV fleet that has been seen over the past 2 decades. This trend has led to an increase in CO<sub>2</sub> emissions despite improvements in fuel efficiency technology and growth in hybrids. Under this scenario, manufacturers would be required to steadily increase the share of their non-ZEVs in lighter vehicle classes in addition to increasing the efficiency by 2% annually. This results in a net improvement of 2.4% annually. This is referred to as the 'lightweighting' scenario.
- 3.20 Example: Suppose that the average CO<sub>2</sub> emissions of new non-ZEV cars sold by Manufacturer X in 2021 is 150 g/km. Table 6 lays out the proposed CO<sub>2</sub> targets from 2024-2027 the flat, tightening, and lightweighting scenarios. These patterns would continue through 2029.

Table 6. CO<sub>2</sub> targets for years 2024-2027 under 3 proposed scenarios for a hypothetical manufacturer averaging 150 gCO<sub>2</sub>/km for new cars sold in 2021

Scenario	2021	2024	2025	2026	2027
Flat	150	150	150	150	150
Tightening	150	150	147.0	144.1	141.2
Lightweighting	150	150	142	140	139

3.21 We propose pursuing the flat scenario, with each manufacturer's CO<sub>2</sub> emissions target remaining constant from 2024-2030 based on their 2021 performance.

3.22 **Question 15: Do you support the flat scenario, the tightening scenario, the lightweighting scenario or a different trajectory for the CO<sub>2</sub> standard? Please explain your reasoning.**

## Applicability of the non-ZEV CO<sub>2</sub> emissions standard

3.23 The non-ZEV CO<sub>2</sub> standard is designed to apply to new cars (M1 vehicles) and vans (N1 vehicles) sold in the UK from 2024 onwards. All vehicles within these categories that do not meet the minimum requirements for a ZEV set out in paragraphs 2.59-2.71 would be included within the activity.

## Derogations

3.24 As discussed previously, the smallest vehicle manufacturers, those selling fewer than 1,000 cars or vans each year, are responsible for a very small share of the overall new vehicle market and generally produce only one or a few models for specialist markets. These manufacturers are currently exempted from targets under the UK CO<sub>2</sub> emissions standard.

3.25 We propose that these micro volume manufacturers (MVMs) also receive a derogation from the non-ZEV CO<sub>2</sub> standard (in addition to the ZEV mandate, as described above). MVMs would not be participants in this trading and would therefore face no mandatory CO<sub>2</sub> average target until the end of 2030. This derogation would be applied automatically by the scheme administrator each year.

3.26 Under the central proposal, the CO<sub>2</sub> emissions standard will not require year-on-year improvements, only that their new non-ZEVs do not become more polluting over time. Therefore, we propose that all manufacturers selling at least 1,000 new cars or vans per year (separately for each scheme) be included under the non-ZEV CO<sub>2</sub> scheme and have the same requirement, relative to their own new vehicles' average emissions in 2021. This would eliminate the small- and niche-volume derogations that currently exist within the CO<sub>2</sub> emissions standards.

3.27 **Question 16: Does the proposal for derogations under the non-ZEV CO<sub>2</sub> standard strike an appropriate balance between supporting small volume manufacturers and minimising increases in emissions from combustion engine vehicles?**

## Exemptions

- 3.28 We propose that vehicle classes that are exempted under the current CO<sub>2</sub> emissions regulations in the UK remain exempt under this new system. This includes all categories of SPVs, including vehicles converted to WAVs.
- 3.29 As with the ZEV mandate, we propose to include vehicles approved through all type approval pathways, including individual type approval (IVA) and national small series (NSS) type approval, provided that they are not SPVs. Although these vehicles are excluded from the existing CO<sub>2</sub> standard, because this new framework requires only maintaining efficiency performance rather than making additional improvements, we believe that vehicles using these niche approval routes can meet the same standard.
- 3.30 Calculation of the 2021 baseline target will follow the same set of exemptions: SPVs will be excluded, but vehicles using the IVA and NSS pathways (and are not SPVs) will be included.
- 3.31 **Question 17: What are your views on the proposed categories for exemptions from the non-ZEV CO<sub>2</sub> standard?**

## Multi-stage vehicles

- 3.32 Some vehicles are substantially modified after their original production and receive type approval at different steps; these are known as multi-stage vehicles. We propose to retain this treatment under the current CO<sub>2</sub> emissions standards.
- 3.33 'Monitoring emissions' for the base vehicle reported by the original manufacturer will be applied toward the calculation of CO<sub>2</sub> emissions activity. Manufacturers shall track the monitoring CO<sub>2</sub> emissions of the final vehicles according to the methodology described in the existing standards to ensure that variations stay within acceptable parameters based on the vehicle's mass, rolling resistance, and frontal area.<sup>34</sup>

## Pooling

- 3.34 Under existing CO<sub>2</sub> emissions regulations, manufacturers may choose to form a pool with any other manufacturer and work toward CO<sub>2</sub> emissions targets as a group. This allows a manufacturer overachieving to compensate another manufacturer for their underperformance.
- 3.35 As the new non-ZEV standard features open trading amongst manufacturers, open pooling is no longer necessary and would be duplicative. Therefore, we propose to restrict pooling to manufacturers within the same larger group of connected entities, following the rationale described for the ZEV mandate in paragraph 2.37.
- 3.36 Manufacturers forming a ZEV mandate pool must also participate as a pool for the non-ZEV CO<sub>2</sub> emissions standard. This is necessary for the transfer of allowances

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<sup>34</sup> The original EU regulations for the emissions of multi-stage vehicles, which have been retained under UK law, are found here: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02019R0631-20201119&from=EN>

from the ZEV mandate to the CO<sub>2</sub> standard and vice versa, described starting in section 3.54.

3.37 The pool's target would be set according to the average of the baseline targets of each member, weighted according to the 2021 non-ZEV UK sales of each manufacturer.

3.38 Example: Manufacturer A and Manufacturer B are part of the same connected entity<sup>35</sup> and wish to form a pool in the ZEV mandate and non-ZEV CO<sub>2</sub> trading schemes. Manufacturer A sold 100,000 non-ZEV cars in 2021 in the UK which had average CO<sub>2</sub> emissions of 140 g/km. Manufacturer B sold 50,000 non-ZEV cars in 2021 in the UK which had average CO<sub>2</sub> emissions of 170 g/km. The resulting non-ZEV CO<sub>2</sub> baseline target for cars for this pool would be:

$$\frac{100,000 * 140 + 50,000 * 170}{100,000 + 50,000} = 150 \text{ g/km}$$

3.39 **Question 18: Do you agree or disagree with the proposal for how pooling would operate under the ZEV mandate and non-ZEV CO<sub>2</sub> standard?**

## Targets for manufacturers entering the UK market

3.40 We propose that average CO<sub>2</sub> emissions targets be set relative to a manufacturer's sales in 2021. However, this methodology does not cover any new manufacturers seeking to enter the UK market who did not sell (non-ZEV) cars or vans in the UK market in 2021.

3.41 We propose that a manufacturer who begins selling cars or vans in the UK during the period from 2024-2029 receive a target (used to determine allocation of allowances) equal to the average of new non-ZEV car or van sales (for the respective schemes) in the prior year.

3.42 For example, if Manufacturer A begins selling cars in the UK in 2025, and the average CO<sub>2</sub> emissions of all new non-ZEV cars sold in the UK in 2024 is 135 g/km, Manufacturer A will receive allowances for 135 g CO<sub>2</sub>/km for their new non-ZEV cars.

3.43 If a manufacturer sells only ZEVs in the UK market in 2021 (i.e., has a fleetwide average of 0 g CO<sub>2</sub>/km) and wishes to begin selling non-ZEV vehicles in 2024 or a later year, their non-ZEV CO<sub>2</sub> target would be determined in the same way.

3.44 If a new manufacturer is formed by combining multiple existing manufacturers which sold cars in the UK in 2021, then the new manufacturer's target will be the weighted average of the constituent existing manufacturers. For example, suppose that Manufacturer Z is created in 2025 by merging Manufacturer X and Manufacturer Y. In 2021, Manufacturer X sold 50,000 non-ZEV cars with an average of 150 g CO<sub>2</sub>/km

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<sup>35</sup> Connected Entities are defined by s. 993-994 of the Income Tax Act 2007 and s. 1122-1123 of the Corporation Tax Act 2010.

and Manufacturer Y sold 25,000 non-ZEV cars with an average of 165 gCO<sub>2</sub>/km. Manufacturer Z would receive a target of:

$$\frac{50,000 * 150 + 25,000 * 165}{75,000} = 155 \text{ g/km}$$

**3.45 Question 19: What are your views on the proposed method for setting non-ZEV CO<sub>2</sub> targets for new manufacturers entering the UK market?**

## Trading

- 3.46 Manufacturers may trade allowances for CO<sub>2</sub> emissions from the non-ZEV fleet. There are no conditions on the price for which allowances may be sold; they may be traded for free or for any amount of money. Only participants in the scheme may purchase or sell allowances.
- 3.47 Manufacturers must notify the scheme administrator of trades they have conducted. This notification must include the number of allowances purchased and the price paid per allowance. Following the close of the trading period, the scheme administrator will publish information on the net number of allowances each participant has added or lost in the trading period, but not the amounts paid, nor the amounts of allowances included in specific trades.

## Transfer of ZEV mandate allowances to non-ZEV CO<sub>2</sub> scheme

- 3.48 The priority of this regulatory framework is to encourage a swift transition to ZEVs. Therefore, we propose that manufacturers who sell ZEVs above the minimum targets can use that to reduce the stringency of their CO<sub>2</sub> emissions targets standard, thus incentivising them to sell more ZEVs earlier.
- 3.49 To enable this, a manufacturer must be a participant in both the ZEV mandate and the CO<sub>2</sub> emissions standard. Following the conclusion of a trading period, allowances earned under the ZEV mandate may be converted to become allowances in the CO<sub>2</sub> standard. Allowances in the car ZEV scheme may only be converted to allowances in the car CO<sub>2</sub> scheme, and allowances in the van ZEV scheme may only be converted to allowances in the van CO<sub>2</sub> scheme. ZEVM allowances acquired through trading may also be converted to allowances in the CO<sub>2</sub> standard.
- 3.50 Manufacturers may only convert ZEVM allowances earned under the car or van ZEV schemes if they have met compliance in that ZEV scheme within that year using in-year allowances, banked allowances and credits. A manufacturer may not convert ZEV mandate allowances from one trading period while also borrowing allowances from a future trading period to meet compliance for that same trading period.
- 3.51 We propose that the rate of conversion reflect the average CO<sub>2</sub> emissions of non-ZEV new cars and vans (in the respective schemes), according to the WLTP cycle, in 2021. For example, if all new non-ZEV cars sold in the UK in 2021 had average CO<sub>2</sub> emissions of 135 g/km, then a ZEVM allowance earned in 2024 could be exchanged for allowances for 135 gCO<sub>2</sub>/km from their new non-ZEV cars sold in 2024.

3.52 Example: Suppose that Manufacturer X sells 100,000 cars in 2026, a year in which the ZEV mandate target is 33%, and thus receives 67,000 ZEVM allowances. They sell 35,000 ZEVs; after using 65,000 in-year allowances, Manufacturer X has 2,000 ZEVM allowances more than is necessary for minimum compliance with the ZEV mandate.

Suppose also that Manufacturer X has a non-ZEV car CO<sub>2</sub> target of 150 g/km; they receive  $150 \times 65,000 = 9,750,000$  CO<sub>2</sub> allowances under this scheme. Suppose that their production was split between 2 models: 30% of their cars were rated at 140 g/km, and the remaining 70% were rated at 160 g/km. Their activity is measured at

$$65,000 * (30\% * 140 + 70\% * 160) = 10,010,000$$

This leaves a compliance gap of 260,000 units.

Manufacturer X may choose to convert 1,926 of their excess ZEVM allowances to non-ZEV CO<sub>2</sub> allowances at a rate of 135 CO<sub>2</sub> allowances per each ZEVM. This yields 260,010 non-ZEV CO<sub>2</sub> allowances, fully offsetting the deficit. Manufacturer X ends the trading period with 10 extra CO<sub>2</sub> allowances and 74 extra ZEV allowances.

3.53 **Question 20: What are your views on this proposed mechanism to enable overcompliance with the ZEV mandate to help toward compliance with the non-ZEV CO<sub>2</sub> regulation?**

## Transfer of non-ZEV CO<sub>2</sub> allowances to ZEV mandate scheme

3.54 Under the existing CO<sub>2</sub> standard regime, manufacturers have met targets through a mix of strategies. While some manufacturers have deployed a significant share of ZEVs, others have invested in improvements in ICE efficiency, hybrid vehicles and plug-in hybrid vehicles as a way to meet CO<sub>2</sub> targets. Due to the multi-year nature of vehicle manufacturers' product planning cycles, some of these strategies may yield additional improvements in non-ZEV efficiency in the coming years.

3.55 To acknowledge these strategies and the potential carbon savings that these investments may yield, we propose to offer limited flexibilities to count ongoing improvements in non-ZEV emissions toward ZEV mandate targets. This flexibility would be offered only the first three years of this regulatory framework: 2024, 2025 and 2026.

3.56 In these years, manufacturers whose average emissions from new non-ZEV CO<sub>2</sub> cars or vans are below their target may convert unused allowances in the non-ZEV CO<sub>2</sub> standard to credits in the ZEV mandate scheme. The proposed rate of conversion is 167 non-ZEV CO<sub>2</sub> allowances per 1 ZEV mandate credit in the car scheme and 216 non-ZEV CO<sub>2</sub> allowances per 1 ZEV mandate credit in the van scheme. These rates of exchange are based on the real-world difference in CO<sub>2</sub> emissions from an average non-ZEV car or van (meeting the above criteria) in the UK compared to a ZEV.

- 3.57 A manufacturer may only transfer allowances below the thresholds outlined above or the manufacturer's non-ZEV CO<sub>2</sub> target, whichever is lower.
- 3.58 The number of credits that can be generated through this provision may not exceed 25% of the ZEV target in any respective year, separately for the car and van schemes. For example, for a car scheme, a manufacturer may earn credits equivalent to 5.5% of a manufacturer's car sales in 2024, 7% in 2025, and 8.25% in 2026.
- 3.59 **Question 21: What are your views on this proposed mechanism to enable overcompliance with the non-ZEV CO<sub>2</sub> standard to help toward compliance with the ZEV mandate targets?**

## Payments for non-compliance with non-ZEV CO<sub>2</sub> standard

- 3.60 Manufacturers who do not meet annual targets for the average CO<sub>2</sub> emissions standards of their non-ZEV car or van schemes and do not purchase allowances from other manufacturers to offset any shortfall must make a payment. Payments are proposed to be the same as under the existing CO<sub>2</sub> regulation. That is £86 per gram (or fraction of a gram) of CO<sub>2</sub> above the manufacturer's target multiplied by the number of non-ZEV cars or vans sold.
- 3.61 For example, suppose that Manufacturer X sells 50,000 non-ZEV cars in a year and has a target of 150 g CO<sub>2</sub>/km, but the non-ZEV cars sold by that manufacturer average 152 gCO<sub>2</sub>/km. In that case, if the manufacturer does not use surplus ZEV allowances or trade for additional CO<sub>2</sub> allowances to meet compliance, they would face a payment of:
- $$2 \text{ gCO}_2/\text{km} * £86/\text{gCO}_2/\text{km} * 50,000 \text{ non-ZEV cars} = £8,600,000.$$
- 3.62 The scheme administrator will issue a notice of compliance shortfall within 1 month of the end of the trading period. If the manufacturer believes that there has been an error in calculation or process, they may file an appeal to a first tier tribunal.
- 3.63 The payment must be paid to the scheme administrator for deposit into the consolidated budget within 2 months of the notice of shortfall, or the decision of the appeal if applicable.
- 3.64 If the payment is not paid within this timeframe, the scheme will enable the government to levy additional measures against the manufacturer which might include, but are not necessarily limited to, the issuance of fines.
- 3.65 **Question 22: What are your views on the levels and structure of the proposed payment system for the non-ZEV CO<sub>2</sub> regulation?**



## 4. Timelines and reporting processes for new regulatory framework

- 4.1 To minimise the administrative burden for government and for industry, the framework aims to maximise commonalities across the components of the scheme in terms of reporting requirements. This section provides a summary of manufacturers' and government's responsibilities under the scheme.

### Data to be submitted

- 4.2 The data to be reported at a vehicle and manufacturer level are similar to those currently required under the CO<sub>2</sub> emissions regulations. All vehicle specifications must be in accordance with the WLTP standards. Manufacturers must also include information on the warranty policy provided for each ZEV model offered to ensure compliance with the minimum specifications as discussed above.
- 4.3 Car clubs to whom ZEVs receiving bonus credits are sold must submit (directly or through the relevant manufacturer selling the ZEVs) a list of the ZEVs in the fleet and the distance driven and number of trips for each ZEV that have taken place in the past year. Additional details on the process for identifying eligible car clubs will be released in due course.

### Timeline for annual reporting and compliance

- 4.4 The process for each scheme would follow a regular schedule beginning at the start of each calendar year from 2024 onwards.
- 4.5 1 January – 31 December, year n: manufacturers report data for each new vehicle registered in the UK to the DVLA as part of the standard vehicle registration process.
- 4.6 1 January – 28/29 February, year n+1: DVLA will send a dataset containing UK registrations from year n to the scheme administrator, and manufacturers will supplement this information with select other pieces of information. This may include but is not limited to: whether the vehicle is a SPV and its category, whether the vehicle was sold to car club or for use as a ZEV, and any information on multi-stage builds.

- 4.7 1 March – 30 June, year n+1: the scheme administrator will analyse the data submitted by manufacturers to produce a provisional dataset, which will include (for each manufacturer) the provisional ZEV target and allowances, provisional ZEV credits earned, and provisional non-ZEV CO<sub>2</sub> target and allowances. The government will complete this dataset by 30 June. A publicly available provisional dataset of relevant vehicles, with some information redacted, could be made available at this stage. If a manufacturer intends to apply for a MVM derogation or closed pool it must do so by 30 April.
- 4.8 1 July – 30 September, year n+1: if manufacturers notice errors with the provisional dataset, they may contact the Department and submit information to correct the discrepancies during this period. The Department will work with manufacturers to finalise numbers and will publish a final dataset at the end of October.
- 4.9 By 31 October, year n+1: the scheme administrator will publish a 'final' dataset, setting out the ZEV and non-ZEV targets and allowances for each manufacturer before any trading occurs. A publicly available dataset of all relevant vehicles, with some information redacted, will be made available.
- 4.10 1 November – 31 December, year n+1: manufacturers may trade ZEVM allowances and CO<sub>2</sub> allowances. During this period, manufacturers must report to the scheme administrator any trades they participated in (including number of allowances bought or sold, participants in the trade and price paid per allowance), whether they wish to convert any excess ZEVM allowances to CO<sub>2</sub> allowances, whether they wish to convert any excess CO<sub>2</sub> allowances to ZEVM credits, and whether they wish to borrow any ZEVM allowances from future years.
- 4.11 1 January – 28/29 February, year n+2: if a manufacturer remains out of compliance for year n, they must make a payment as described above, or issue an appeal.
- 4.12 Figure 10 illustrates the process timeline and requirements for both the ZEV mandate (dark green) and CO<sub>2</sub> standards (light green) on an annual basis. Manufacturers may submit one report containing information for all schemes in which they participate, provided that all relevant information is included. The red arrows at the right show the two-way allowance transfer from the ZEV mandate to the non-ZEV CO<sub>2</sub> scheme and vice versa.

Consultation on a zero emission vehicle (ZEV) mandate and CO<sub>2</sub> emissions regulation for new cars and vans in the UK

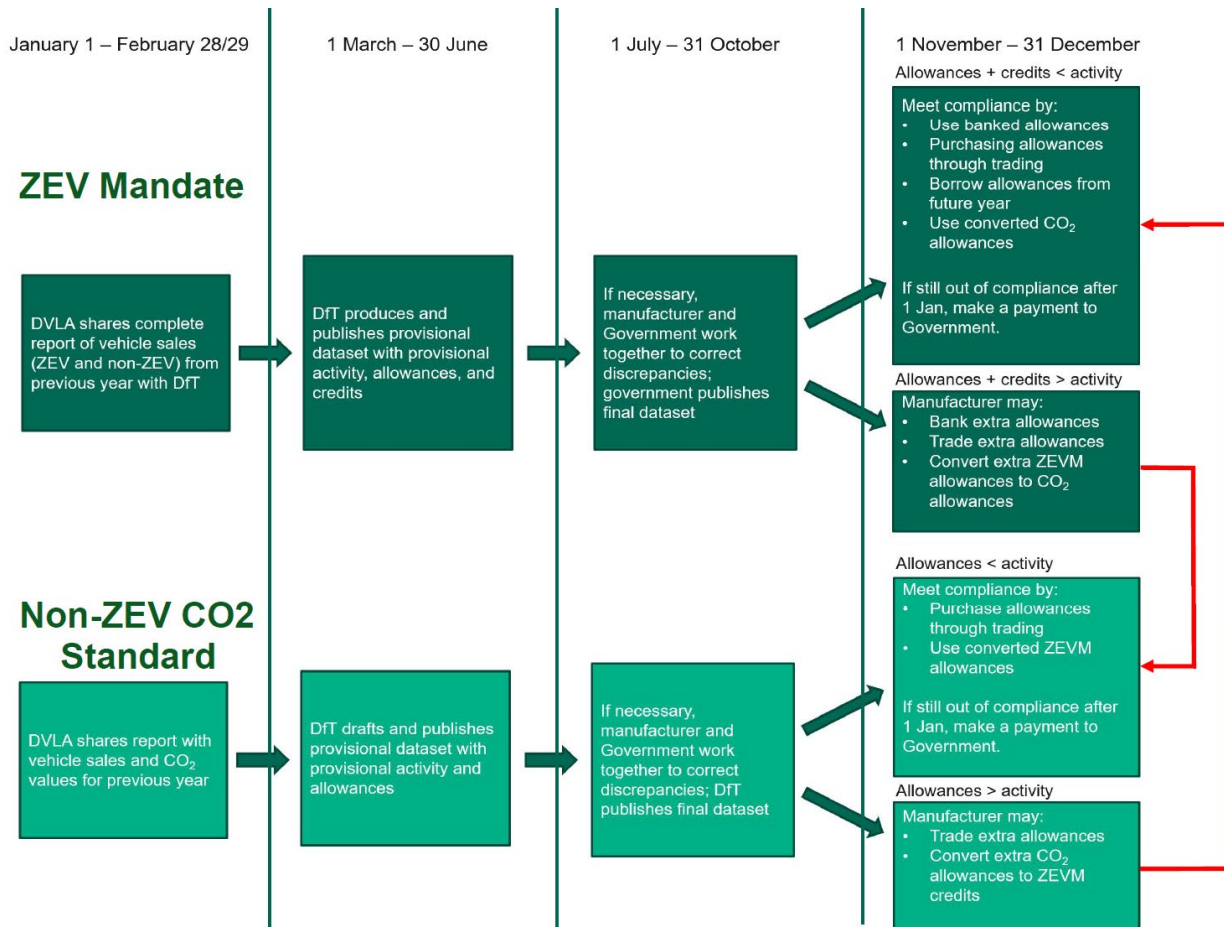


Figure 10. Proposed template for timeline for reporting and compliance with new regulatory framework.

4.13 **Question 23: What are your views on the proposed timeline and process for reporting data and meeting compliance with the ZEV mandate and non-ZEV CO<sub>2</sub> scheme?**

**Review of regulation**

4.14 The ZEV market has shown consistent growth over the past decade, indicating the proposed targets are achievable. However, recent global events illustrate how the transition to ZEVs can be impacted by unpredictable external events, such as COVID-19, Russia’s invasion of Ukraine and the shortages of semiconductors.

4.15 Acknowledging the unpredictability of the global market, we propose keeping the regulation under review to enable adjustments as appropriate and using established reporting routes to make information on its effectiveness publicly available.

4.16 The regulation may be revised in other ways to reflect changing market conditions. This could include amending the stringency of targets, changing the minimum technical specifications, modifying the provisions for extra credits for car clubs or

WAVs, or bringing additional categories of SPVs into the scope of the ZEV mandate and CO<sub>2</sub> emissions standard.

- 4.17 Government will issue a consultation and seek stakeholder feedback before making any significant modifications to these regulations.
- 4.18 Additionally, we recognise that there is an unlikely possibility of unprecedented circumstances in which non-compliance is beyond the control of manufacturers. For such cases, government may exercise its discretion in pursuing enforcement action or amend legislation to reduce or disapply payment provisions in this narrow set of circumstances. This may apply to the ZEV mandate, the non-ZEV CO<sub>2</sub> standard or both depending on the nature of the extenuating circumstances.
- 4.19 **Question 24: Do you support or oppose the proposal to keep the regulation under review?**
- 4.20 The government understands that the transition to ZEVs will not unfold in the same way across all of the UK, with technology, consumer transport needs and local policy playing a role in how quickly different regions transition to ZEVs. Remote and rural areas, particularly in our island communities, may face unique challenges and the UK Government and the Devolved Administrations are committed to supporting these communities throughout the transition.
- 4.21 **Question 25: What are your views on the potential impact of the two proposed schemes on communities in the more rural and remote parts of the UK and to those businesses involved in the sale of vehicles in those areas?**

## What will happen next

A summary of responses, including the next steps, will be published within three months of the consultation closing by 24 August. Paper copies will be available on request.

If you have questions about this consultation please contact:

Zero Emission Vehicle Regulations Team

1<sup>st</sup> Floor

Department for Transport

33 Horseferry Road

London

SW1P 4DR

[zevmandate@dft.gov.uk](mailto:zevmandate@dft.gov.uk)

## Annex A: Full list of consultation questions

Question 1:

(a) Do you agree or disagree with the UK Government's preference to introduce a UK-wide regulatory framework?

(b) Or, do you agree or disagree with the introduction of different trading schemes with separate requirements in one or more of the nations, different from the rest of the UK? Please explain your answer.

Question 2:

(a) Do you agree or disagree with the UK Government's preference to introduce UK-wide annual targets?

(b) Or, do you agree or disagree with year-on-year targets having to be met within each nation of the UK annually? Please explain your answer.

Question 3: Do you agree or disagree with the proposal for the central trajectory for new zero emission cars set out in Table 1?

Question 4: Do you agree or disagree with the proposal for the central trajectory for new zero emission vans set out in Table 2?

Question 5: Do you agree or disagree that the proposed derogations (thresholds and adapted trajectories) strike an appropriate balance between supporting small volume manufacturers while also ensuring that all manufacturers play a part in the transition to ZEVs?

Question 6: Do you agree or disagree with these proposals for the inclusion or exclusion of SPVs? If you disagree, please state your reasons for specific SPV categories.

Question 7: Do you agree or disagree with the proposals for banking during the 2024-2030 period?

Question 8: Do you agree with the proposed provisions for borrowing in the 2024-2026 period? If you disagree with the proposal, please provide alternative options and your rationale.

Question 9: What are your views on the proposed minimum requirements for ZEVs (emissions, minimum range and warranty)?

Question 10: Are there additional minimum requirements that should be added to the regulation (in the first year or at a later point)? Please provide your rationale.

Question 11: Do you agree or disagree with the proposal to provide additional credits to ZEVs used in car clubs? Are there any additional criteria or provisions that can increase the effectiveness of these incentives? Please explain your reasoning.

Question 12: Is the proposed incentive mechanism an appropriate and beneficial way to support the development of zero emission WAVs?

Question 13: What are your views on the proposed payment levels in the ZEV mandate?

Question 14: What are your views on the proposed methodology to set baseline CO<sub>2</sub> emissions targets for manufacturers?

Question 15: Do you support the flat scenario, the tightening scenario, the lightweighting scenario or a different trajectory for the CO<sub>2</sub> standard? Please explain your reasoning.

Question 16: Does the proposal for derogations under the non-ZEV CO<sub>2</sub> standard strike an appropriate balance between supporting small volume manufacturers and minimising increases in emissions from combustion engine vehicles?

Question 17: What are your views on the proposed categories for exemptions from the non-ZEV CO<sub>2</sub> standard?

Question 18: Do you agree or disagree with the proposal for how pooling would operate under the ZEV mandate and non-ZEV CO<sub>2</sub> standard?

Question 19: What are your views on the proposed method for setting non-ZEV CO<sub>2</sub> targets for new manufacturers entering the UK market?

Question 20: What are your views on this proposed mechanism to enable overcompliance with the ZEV mandate to help toward compliance with the non-ZEV CO<sub>2</sub> regulation?

Question 21: What are your views on this proposed mechanism to enable overcompliance with the non-ZEV CO<sub>2</sub> standard to help toward compliance with the ZEV mandate targets?

Question 22: What are your views on the levels and structure of the proposed payment system for the non-ZEV CO<sub>2</sub> regulation?

Question 23: What are your views on the proposed timeline and process for reporting data and meeting compliance with the ZEV mandate and non-ZEV CO<sub>2</sub> scheme?

Question 24: Do you support or oppose the proposal to keep the regulation under review?

Question 25: What are your views on the potential impact of the two proposed schemes on communities in the more rural and remote parts of the UK and to those businesses involved in the sale of vehicles in those areas?

## Annex B: Consultation principles

The consultation is being conducted in line with the Government's key consultation principles which are listed below. Further information is available at <https://www.gov.uk/government/publications/consultation-principles-guidance>

If you have any comments about the consultation process please contact:

Post: Consultation Co-ordinator, Department for Transport, Great Minster House (GMH),  
33 Horseferry Road, London, SW1P 4DR

mail: [consultation@dft.gov.uk](mailto:consultation@dft.gov.uk)