# DecarboniseNow – Green Paper on a New Road Vehicle CO2 Emissions Regulatory Framework for the United Kingdom response

DecarboniseNow is an entirely volunteer led climate change campaign which aims to promote and investigate the specific policies needed to decarbonise the UK as quickly as possible. It has a particular focus currently on low carbon transport.

**Overview and key messages**

DecarboniseNow is very happy to see the Department of Transport building the framework for achieving its 2030 and 2035 clean transport targets and the intentions of the Transport Decarbonisation Plan. While we feel there are certain areas that need tightening in this green paper to avoid loopholes, we are happy to see the approach the paper is taking, in particular the preference for a Zero Emission Vehicle (ZEV) mandate on top of existing regulations.

We strongly agree with the government's preference for a ZEV mandate in addition to CO2 regulations, and feel that the former will be greatly more important for electric vehicle take-up than the latter. We believe the green paper is overestimating the role that Hybrid Electric Vehicles (HEVs) and Plug in Hybrid Electric Vehicles (PHEVs) can play in the lead up to 2030 and 2035, and would strongly suggest that only Battery Electric Vehicles (BEVs) are included as part of the ZEV mandate. Fines for not reaching the ZEV mandate should be tough (to the value of 20% of average car cost for the company) and we strongly oppose offsetting of credits under the mandate for future years. We support expanding the regulations to other forms of road transport such as HDVs and L-Category vehicles.

The race to zero emission vehicles will be the most important element of reducing emissions in the 2020s, not just in absolute terms of emissions reduction, but given likely slower progress in other sectors, it will in many ways determine the future course of climate policy. We are therefore very pleased to see the government following up the world leading 2030 ban with a regulatory framework, and while we feel some areas of the green paper are too lax, we support the direction of the paper overall.

DecarboniseNow is happy to be contacted to further follow up, and we welcome any opportunity to assist the Department of Transport and wider government in its goal towards net zero transport.

## Chapter 4: Defining Significant Zero Emission Capability

### Q1 - What metric, or combination of metrics should be used to set eligibility for cars and vans between 2030 and 2035?

The first two metrics of grams of CO2 per kilometre and continuous zero emission range should be the main metrics used. The former due to requiring an overall measurement of carbon dioxide emissions, and the latter for ensuring that PHEVs sold past 2030 have significant zero emission capability. We do not have any views on alternative metrics.

### Q2 – For your chosen metric, what threshold should new cars and vans be required to meet from 2030?

New cars should be required to emit no more than 30g of CO2 per km by 2030, and all vehicles should be required to travel at least 50miles or 80km on a single charge. While this may seem like a very large step up from current requirements that will push out hybrid vehicles, given the large disparity between real world and test conditions for CO2, this is necessary to drive better standards for hybrid vehicles, and in reality it can be expected that the CO2 emissions will be larger and the battery range shorter than stated. This will effectively push out HEVs from sales by 2030, which we fully support, given that HEVs are only 23% lower in emissions per km than a full petrol equivalent, and at 92g of CO2 per km in test conditions, are currently barely in line with the 2020 target, let alone a tougher target 10 years later.

On PHEVs, we appreciate that the government has decided that they will be part of the sales mix between 2030 and 2035. However, we consider PHEVs measurement very unpredictable given the gap between real world and test conditions, so would urge that if PHEVs are to be considered as part of the 2030 sales mix, that conditions are deliberately made harsher to accommodate for the gulf. Given that the average PHEV does not meet either requirement set out above, it will also force automakers to produce better performing PHEVs, despite the lack of real world data. For more detail on the issues of PHEV sales in 2030, please refer to question 4.

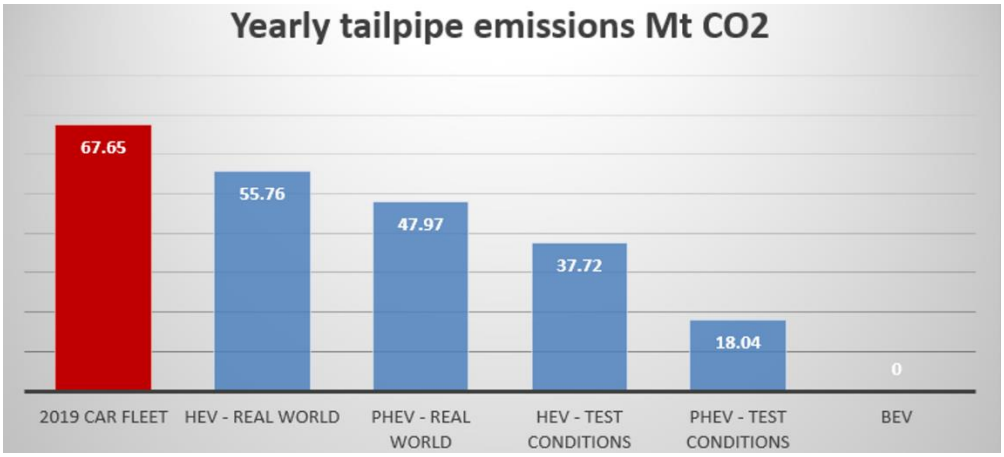
### Q3 - What other requirements could be introduced, if any, to maximise zero emission capability?

We would refer chiefly to our answers to questions 2 and 4 here, but reiterative that a maximum emphasis on BEVs over other car and van types is an immediate no-regrets solution that maximises zero emissions potential from the fleet. Additional measures for on-board performance and closing the gap between real world and test emissions are not necessary with a BEV vehicle.

### Q4 – What would the impact be on different sectors of industry and society in setting an SZEC requirement, using evidence where possible?

The primary impacts of a Significant Zero Emission Capacity requirement will hinge on what is defined as an appropriate SZEC requirement. DecarboniseNow did not support inclusion of any hybrids into car sales by 2030, and while we recognise that the government will be including them, will still have significant

concerns. These are primarily that hybrids could keep emissions high, not just in 2030 but going forwards to 2045. To illustrate this, we refer to the below graph, showing the hypothetical range of emissions reductions if cars from the current fleet where to be switched over entirely to their BEV, PHEV and HEV equivalents, with the latter two including both real world and tested emissions performance.




Given that all surface transport (112Mt in 2019) has to reduce to 68Mt by 2030 and 32Mt under the Climate Change Committee's modelling, and that this is dependent of success in the economy for less developed areas of decarbonisation, we feel switching to BEVs is one the biggest priorities for reaching net zero. As such, we would limit sales of PHEVs and HEVs as much as possible towards 2030.

The Climate Change Committee have also advised that no PHEVs should be sold past 2032, and a maximum of 3 million PHEVs should be on the roads in order to align with climate targets. PHEV and HEV vehicles are advised by the Committee to be phased out at the same time as conventional vehicles, and also envisages 97% of vehicle sales being BEVs by 2030. As such, we do not feel that PHEVs or HEVs should receive any incentives compared to conventional cars, and an overreliance on either could jeopardise near term carbon budgets.

Industry impacts would include a requirement to move towards further electrification. It may also have to rethink some of its model line-up, but with a ban looming for PHEVs and HEVs, this may have become a necessity regardless. The industry should not be incentivised to develop and rollout higher emitting vehicles, only for those models to be banned a short while later. This is not only bad environmentally, but will provide false market signals for the industry, which may invest considerable resources in PHEVs for a short time, only to have to switch yet again. It should be made very clear to industry that BEVs will be the future of light vehicle production, otherwise there is a large risk of stranded assets for the industry.

All the wider impacts of switching to electrification can also be seen here, such as improved air quality, public popularity, lower lifetime vehicle costs, green job creation, and revitalising the car industry.

## Chapter 5: New Regulation for Cars and Vans

**Q5 - Do you have any comments regarding Option 1, to replicate the current regulatory framework, albeit with strengthened targets, to meet our wider carbon reduction targets and phase out dates?**

Please refer to our answer to Question 7.

**Q6 - Do you have any comments regarding Option 2, to introduce a ZEV Mandate or sales target alongside a CO2 regulation?**

Please refer to our answer to Question 7.

**Q7 - Do you have any views on the government's initial preference for the regulatory approach set out in Option 2?**

DecarboniseNow strongly supports Option 2. Option 1 as the green paper has demonstrated will not get anywhere close to the zero emissions required at tailpipe by 2035, nor will it achieve the emissions reductions for the fourth, fifth and sixth carbon budgets. There is also the very real risk of companies continually putting out conventional vehicles with small incremental changes and not producing electric vehicles. Companies can be easily caught out if there is no direct incentive to produce BEVs in the short term, and a 'capacity crunch' towards 2030 and 2035 is what a ZEV mandate would help avoid. Neither the 2030 or 2035 bans are realistic without sustained short term policy to incentivise production as well as sales, which a ZEV mandate delivers. In addition to supply chain incentives, charging infrastructure and grid upgrade rollout, and direct fiscal support for the next few years through the Plug-In Grant, this can create a truly world leading clean transport policy.

It also provides clarity in the short term for companies on what direction that sector is taking each year, and encourages continual and increasing production of electric vehicles. It is one of the main policies highlighted by the Climate Change Committee for the sixth carbon budget, and would lay to rest concerns the automaker industry has about the consumer demand for electric vehicles. Many companies are also not going to operate their day to day business demands on timescales such as 2030 or 2035, by what the market is likely to do in the next year, which a yearly ZEV mandate greatly helps to provide direction on.

Additionally, option 2 has no drawbacks for option 1, as CO2 regulation will still be part of the overall policy package of measures. So in effect, this question is asking whether the respondent supports a ZEV mandate, so which we would say an emphatic yes. The main conclusion is that a mechanism for mandating a certain number of BEVs to be sold each year is required to meet carbon budgets, and the ZEV mandate is the mechanism to do that.

**Q8 - Are there alternative approaches that could deliver on the government's carbon budget and 2030/2035 commitments?**

We believe the government has identified the primary mechanisms for reducing emissions from road transport. While other tax based methods have been tried in other nations (such as an income tax reduction based on the type of car owned) we believe these are not sufficient to deliver the kind of carbon

reductions required under the fourth, fifth and sixth carbon budgets. We would also argue that a ZEV mandate is a necessity for reaching those targets, as CO2 regulations alone are unlikely based on current trends to have the emissions reductions potential required. We also consider an overreliance of PHEV and HEV vehicles to be a risk to meeting carbon budgets. For the impacts of this, please refer to our response to question 4.

**Q9 - Do you have any views on how either, or both, of the options could be implemented?**

The CO2 regulation is the easier to implement, as this will be an extension of the existing system, with the UK setting its own targets for 2025 and 2030. The ZEV mandate meanwhile, as a new policy measure, will require post-legislation legally binding yearly targets for auto manufacturers to meet. These targets should become increasingly stringent with each passing year on a sliding scale. These should not include any electric vehicles except for BEVs. While the green paper is explicit in not asking for specific targets, we would say that an overwhelming majority of sales should be BEVs by 2030. We also advise that CO2 regulation should apply separately from the ZEV mandate, rather than ZEV uptake being counted towards manufacturers CO2 regulation goals. This is necessary to ensure a greater standardisation of non-BEV vehicles.

**Q10 - Do you have any further comments or evidence which could inform the development of the new framework?**

Please refer to the answers to Questions 5-9.

**Q11 - If deploying a combined ZEV Mandate and CO2 regulatory framework, how should the CO2 element be set?**

The ZEV mandate should apply to fully Battery Electric Vehicles only, which do not require any fossil fuel combustion to produce mobility. The CO2 element should then apply to all other vehicles, where PHEV and HEV vehicles will have a natural advantage.

**Q12 - Should the focus be on delivering the largest possible CO2 savings, or the quickest possible switch to zero emission mobility?**

We would strongly emphasise a focus on the latter. We have no objection to the approach of reducing CO2 from across the fleet, but as the EU examples have shown in the green paper, this results in a small universal reduction, and not the kind of step change that is required. Only switching to fully electric vehicles will enable this, and thus mandating a requirement for an ever increasing proportion of fully electric vehicle sales is the more important of the two emphases. The smaller and incremental improvements of the CO2 regulation can also be gamed, with a gap between test and real world conditions which is not an issue when measuring a switch to battery electric vehicles. As the green paper has made quite clear from Figure 3 on page 15, the current approach from CO2 regulations does not come close to zero tailpipe emissions at sale by 2035.

**Q13 - How do we ensure that the target allows for sufficient supply of low and zero emission vehicles; supports investment in the UK; and delivers our carbon reduction commitments?**

The green paper has made it clear that is not looking for views on the specific targets that would be included under a ZEV mandate. Respecting that requirement without going further into detail, the targets for the ZEV mandate must be ambitious enough in the short term to spur rollout of models, without not being so ambitious that supply chains do not have capacity to scale up in time. Given the rapidly expanding percentage of electric vehicles sold as part of overall sales even after the pandemic, the short term targets should not be afraid of being ambitious given the rapid change in the market. Automakers who have invested in both the vehicles and supply chains for them in the UK will also want to see payoff for their investment, which an under ambitious target will set back.

On supporting UK investment, this may be the area of other related policies, such as the UK government working with industry to secure manufacturing sites such as Gigafactories, encouraging further investment in existing automaker plants, as well as upskilling the existing workforce. It should not be in the remit of the ZEV mandate or the CO2 regulations to enforce a share of investment in the UK, but this could be integrated into other policies around the supply chains of EVs. However, merely by having an ambitious ZEV mandate this will put the UK ahead of the EU and some neighbouring countries, which will encourage investment into the UK as it will be a large and ambitious market. This alone should see considerable investment in the UK as a leading country, with additional investment in supply chains covered in separate future policy.

On delivery of carbon reduction commitments, as in above answers we believe that only BEVs should be eligible for credits under the ZEV mandate. While we respect the government's decision to include hybrids in vehicles sales until after 2030, we do not believe that hybrids should receive any additional incentives other than performing well under the CO2 regulations. This is strictly necessary to reduce emissions, as large numbers of hybrids bought in the early 2030s would keep emissions levels artificially high for up to 15 years, even though emissions would be considerably lower than today. We also believe the CO2 regulations should effectively restrict all HEV sales, and for PHEVs that cannot reach 50 miles on a single charge. Please refer to our answer to question 4 for further detail.

**Q14 - Should the new regulatory framework include exemptions or modified targets for certain specialist vehicles and/or niche and small volume manufacturers?**

The new regulatory framework should retain exemptions for the certain specialist, emergency, and military vehicles highlighted. However, micro volume manufacturers should not be excluded. They should receive adjusted targets in much the same way as small and niche volume manufacturers currently do. This will be less of an issue for CO2 regulation, but will be important for the introduction of a ZEV mandate for larger vehicles such as HDVs, which have may

have smaller manufacturers for more specialised vehicles. It is also in the interest of fairness for all manufacturers to be put to a universal standard.

**Q15 - Should credits be awarded to vehicles that meet the SZEC definition?**

No, credits should only be awarded to vehicles that are fully battery electric and require no fossil fuels to run. Please refer to our answer to question 4 on the current drawbacks of hybrid vehicles, and why we do not view them as requiring further incentives.

**Q16 - If so, should this be a fixed number of credits, or should there be a sliding scale that recognises the difference in CO2 efficiency of various SZEC-compliant vehicles?**

See response to Question 15.

**Q17 - Should this be considered within the new framework?**

We would strongly disagree with offsetting of credits for future years. This is because this acts against the issues which the ZEV mandate is trying to solve, which is manufacturers leaving production of EVs until a later date. Much like the example given in the green paper, manufacturers could also flood their market with electric vehicles in a given year and then have less incentive to produce those vehicles the next year. The ZEV mandate is to give certainty that there will be an increase in electric vehicle sales every year, and keep the market consistently in that direction. Future offsetting can act against that, and should not be considered in the new framework.

**Q18 - If so, over what timeframe should they remain usable and should credits and debits be treated the same or differently?**

Please refer to our response to Question 17. We strongly disagree with deferring credits to future years.

**Q19 - Within the trading element of the new scheme, should there be limits on the number of certificates/grams of CO2 that can be bought or sold?**

Yes. While we support the trading element of the scheme, as it will give companies flexibility to reach their goals as an industry, without some restrictions this could lead to perverse outcomes. For example, some manufacturers such as Tesla already produce 100% electric vehicles, with others such as Jaguar aiming for the same by 2025. If these companies were to support smaller companies without extensive electrification plans, it could effectively keep them open and producing fossil fuel cars until the 2030/35 date, then these smaller companies would collapse as they could no longer sell their vehicles. The trading element should be broad enough to allow companies slower to the transition to compensate, but not so much that companies can effectively buy their way out of preparing for the transition. We would recommend that no company can purchase the equivalent certificates for more than 20% of their

production in any one year. For grams of CO2, we are open to retaining the current requirements.

**Q20 - Should such a market cover the whole of road transport or should there be some constraints imposed on trading across manufacturing sectors (e.g. cars and Heavy Duty Vehicles)?**

Allocation should be split into smaller markets based on type. The timescales and development of HGVs will be very different to zero emission cars and vans. Therefore, separate markets for trading should exist for cars, vans or Light Ground Vehicles (LGVS), HGVs below and including 26t, HGVs above 26t, other HDVs (including buses and coaches) and Category L vehicles. The separation of HGVs is based on the suggestion for suggestion from the Transport Decarbonisation Plan based on the different technology types to be used. This covers all areas of road transport, but allows greater flexibility for vehicles that may be at very different stages of development.

**Q21 - How, and at what level, should fines be set in the new UK regulatory framework and should this vary for different vehicle types?**

For the CO2 regulation system, the fines are sufficient at present. For the ZEV mandate, the fines would have to be set at a higher level to deter companies from producing petrol and diesel cars and paying such fines anyway as an added cost. Fines for not selling the proportional target of ZEVs should be the equivalent of 20% the price of the average vehicle by the company. For example, if Company A misses their target by 5,000 vehicles, they would have to pay the equivalent of an average 1,000 vehicles to make up the shortfall, or trade with other vehicle manufacturers. This would be more than sufficient to strongly incentivise manufacturers away from producing petrol and diesel vehicles. Indeed, these fines can be thought of almost as an extra tax, such as VAT at 20%, that can be levied at manufacturers failing their obligations. This can be applied to all different vehicle types, as it will be up to the level of targets under the ZEV mandate to reflect the differing maturity of different technologies. Given that this green paper's remit is not to investigate what such targets would be does make answering this question more difficult, for if less stringent targets were implemented we would suggest higher fines and vice versa.

**Q22 - Would there be benefits in seeking to ensure any CO2 targets in the new UK regulatory framework take into account real-world emissions data alongside the lab-tested WLTP CO2 emissions figures? If so, how might the two be linked?**

There would be benefits in the short term, for closing the gap on tested and real world performance would make CO2 regulation more reliable. However, the inclusion of this question and its requirement highlights the limitations of CO2 regulation, and how the regulations on their own are not fit for purpose for real world emissions reductions. A ZEV mandate remains a more reliable test.

## Chapter 6: Extending the Framework to all Road Vehicles

**Q23 - For vehicle sub-categories that are not yet covered by VECTO, could a ZEV Mandate/sales target be extended before VECTO is adapted?**

A ZEV mandate should be extended before VECTO is adapted to all vehicles. While the CO2 regulation and ZEV mandate overlap, one does not have to wait for the other, and given the potentially long timescales involved in VECTO being tested for all vehicles, this could delay action that would otherwise result in rolling out fully electric models.

**Q24 - Would there be any unintended consequences of establishing a ZEV Mandate for certain vehicle sub-categories before a $CO_2$-based regulation?**

Given the currently relatively small market size of ZEV vehicles in the HDV market, there is unlikely to be any major unintended consequences of introducing a ZEV mandate. This is likely to be small proportions of a larger market. While some HDVs will be currently regulated under CO2 requirements and some not, the introduction of a ZEV mandate will affect these companies equally. With likely longer term bans on sales of conventional HDVs, there will be less immediate requirement even with a universal system of CO2 regulations for vehicle manufacturers to produce zero emission HDVs without a regulatory mandate. This makes an introduction of a ZEV mandate a priority over CO2 regulation.

**Q25 – Do you have any views on imposing a CO2 regulation on vehicle types that are not yet covered by a CO2 test procedure, or existing regulation, particularly in light of the planned future phase out consultation for new non-zero emission buses?**

These will be required to make the overall system fairer and more applicable for all vehicle types in the HDV range. The main risk is that vehicles in this category not covered by CO2 regulation could sell higher emitting models during that time, putting emissions reductions for road transport into reverse. However, this is not as serious an issue of there simply not being enough incentives for zero emission HDVs to enter the market, which makes the adoption of a ZEV mandate a priority.

**Q26 - Should the preferred regulatory approach be extended to all L-category vehicles or should the diversity of the sector (motorbikes, mopeds, motorised tricycles, quadbikes, motorised quadricycles etc) necessitate different approaches?**

As with the above sections, we strongly support introducing a ZEV mandate for L-category vehicles. While we would support some form of CO2 regulation, its primary value for the other vehicle types is to cap emissions of new vehicles from increasing to higher levels than currently. Given the small emitting status of L-category vehicles, we consider introducing it considerably less important than for other vehicle types.

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Additional DecarboniseNow analysis

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