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NET ZERO REVIEW SUBMISSION

Motorcycle Industry Association submission

October 2022

MCIA submission to the Net Zero Review submission

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1. MCIA and its members are committed to tackling climate change challenges and accept that CO₂ reduction is a key part of this. Emitting less than 0.5% of the UK's total domestic transport emissions, we do not believe we should be a priority target group for Government as it heads towards net zero. We do, however, appreciate there cannot be one rule for one transport mode, and another rule for others in the collective effort to reducing emissions at the tailpipe, and so call on Government to be more creative in its approach to addressing the complexities and technical challenges faced by the L-Category sector and the need to take a different approach to reaching net zero in a way that does not adversely affect the industry.
2. We therefore reject DfT's proposed phase out dates for our sector as being unrealistic and there would be a significant risk of the major players reviewing their place in the UK market. This may result in a reduction in UK operations or manufacturers' leaving the market altogether until technology development is such that products can be more easily brought to the UK market.
3. The DfT's proposals fail to adequately consider the complexities and nuances of the different vehicle categories, which means what is feasible for some segments (e.g. mopeds, or 'L1' vehicles) is not feasible for others (e.g. higher powered motorcycles that sit within the 'L3' vehicles). As already recognised by the then Minister, a 'one size fits all' approach will not work for this sector, the reasons for which we outline in this submission.
4. Having consulted with our manufacturer members, we propose the following alternative timeline for ending the sale of new, non zero emission L-Category vehicles as we believe it more accurately reflects the complexities of our sector and, therefore, will limit any damage to the market, whilst at the same time addressing CO₂ reduction. This must be considered with reference to the points we raise on readiness checks and a ZEV mandate in paragraphs 12 and 65 respectively.

2030	2035	From 2040
L1 and L2 Category vehicles up to 4kW	L4, L6 and L7 L-Category	L3 and L5 Category vehicles above 4kW

2030: L1 and L2 L-Category vehicles (up to 4kW)

5. Clearly, future technology is well suited to these categories and already helping to evolve the market at pace. These products are primarily used for short to medium distance commuting and "last mile" deliveries. Whilst there is still lots to be done to improve range and whole vehicle costs, industry is confident the 2030 date can be achieved without major disruption to the market and supply chain.
6. Additionally, in terms of frequent, urban, and sub-urban use, these categories provide the most gains in terms of greenhouse gas (GHG) emissions savings.

2035: L4, L6 and L7



7. L4, L6 and L7 vehicles are extremely diverse with multiple use cases. This includes urban (personal) mobility, leisure, light cargo, and last mile deliveries. It is clear this sector is quickly moving to electrification, but at the same time, a “one size fits all” approach will damage important sectors of the market if their phase out deadline remains as 2030.
8. Volumes in these sectors are extremely low (currently less than 5% of the total market), with new entrants likely to be zero emission. However, what volumes do exist are made up of vehicle types that are used for sport and leisure. If the Government decides the deadline for these segments remains at 2030, MCIA would be looking for exemptions to be considered within this segment.

From 2040: All L3 and L5 L-Category vehicles

9. The L3-Category is dominated by motorcycles and scooters that are mainly used for leisure purposes, travelling less than 3000 miles per annum and primarily in rural environments which have a limited impact on emissions.
10. Combined with the technical challenges, MCIA and its members are calling on the Government to treat these categories as exempt, or to approach them in another way (as with aviation and HGVs). We propose “From 2040” which would allow battery technology and alternative fuel solutions to develop over the next 15 to 18 years and before committing to an outcome that may significantly damage the economy and market.
11. Furthermore, regulatory divergence must be avoided at all costs. MCIA is calling on the Government to consider its position by allowing the necessary time for technologies to develop which, in-turn, would allow the sector to base its decision on facts and not what we hope might be the case.

Readiness checks

12. Underlying our alternative timeline for phasing out new, non zero emission L-Category vehicles, is the requirement that Government is as ready as it can be in advance of the phase out dates coming into force.
13. Our industry is rightly being asked to make significant changes to the way in which our vehicles operate. However, before committing to any investments in new technology, it is critical our members receive a guarantee from Government that, in doing so, the necessary infrastructure is in place and policies around driving demand and improving access to our sector have been implemented (see question 6 regarding encouraging uptake of zero emission L-Category vehicles).
14. MCIA is therefore also calling on the Government to conduct full scale readiness checks on these different areas, alongside MCIA and its members, two years in advance of each new phase out date:

Categories	L1 and L2 Category vehicles up to 4kW	L4, L6 and L7 L-Category	L3 and L5 Category vehicles above 4kW
Readiness Check Date	2028	2033	2038



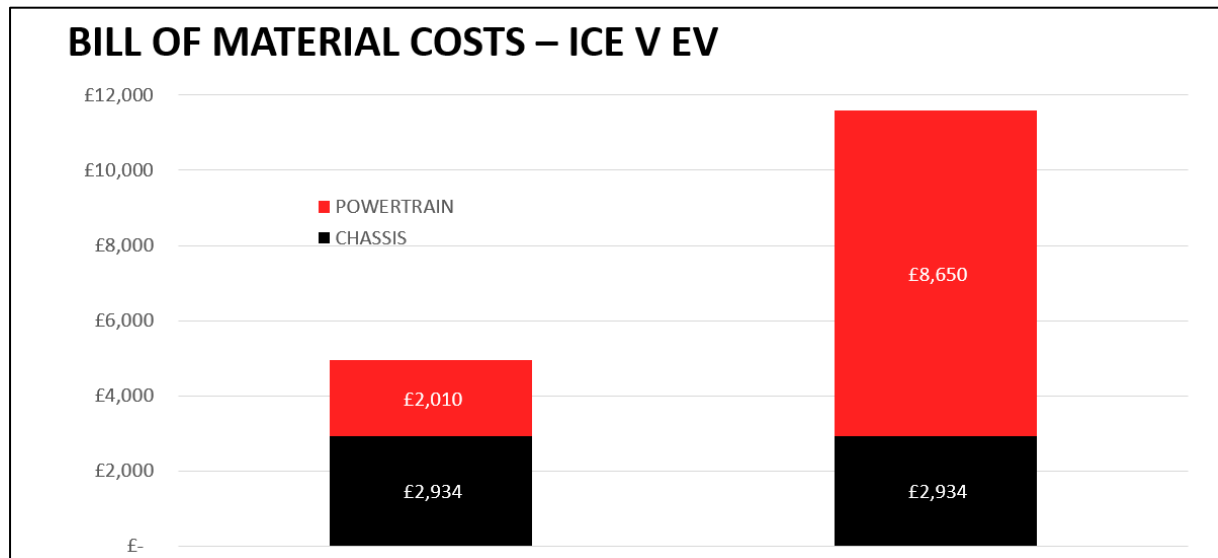
Phase Out Date	2030	2035	From 2040
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L-Category component and system supply chain (especially L3)

15. The DfT’s consultation states it wants to *reflect the current status of zero emission technology but ensure we respect the diverse characteristics of each vehicle type*. Whilst it is appreciated there is an element of understanding of the L-Category sector’s complexities, the consultation and its proposed dates do not reflect current and near-term technology when applied to the sector’s different vehicle types.
16. The L-Category sector is unlike the automotive sector and far behind it in terms of component and system supply chain development, but also in terms of market size. What is feasible for the automotive sector when it comes to zero tailpipe emissions is not necessarily feasible for all L-Category segments. It must be stressed that, current technologies (batteries), drive trains and system components are not transferable to most categories within the sector.
17. However, industry is trying to develop current and new technologies where it can, with the caveat that this will take considerable time to develop and therefore enter into production. For example, the Swappable Battery Consortium founded in 2021 by Honda, Piaggio, KTM and Yamaha has since been joined by 17 new manufacturer members in its efforts to find solutions to the concerns customers may have regarding the future of electromobility, such as the range, the charging time, infrastructure, and vehicle costs.
18. As electrification of the L1-Category accelerates, the increased range, power, and performance required of high powered L3-Category vehicles will require different solutions to those available today.
19. If the current technologies were easily transferable, cost consideration raises a further challenge and therefore a market barrier. The average retail price of an L3-Category motorcycle is circa £8,000. Key drive train and energy components (batteries, motors, controllers) have a unit price which would, as a minimum, double the current price position on the final product, as proven by those few products which are available on the market today. For example, we have been advised by manufacturers that the material costs to produce an electric PTW, in comparison to an ICE vehicle, would rise from circa 40% to 75% of the current retail figure (see figure 1).

Figure 1: Material costs – ICE PTW vs EV PTW





20. The current situation means manufacturers face a dilemma. Current technology does not suit every L-Category vehicle type, and if it did, the final retail price of the product would be incomparable to today’s internal combustion engine (ICE) products. Applying today’s thinking, industry believes this would significantly damage the new vehicle market, leading to users continuing to operate older vehicles for considerably longer.
21. MCIA has also been informed some manufacturers are developing Hybrid Electric Vehicles (HEV) as part of the transition to zero emission vehicles.

Environmental contribution

22. The Transport Decarbonisation Plan, published last July, acknowledges explicitly that, as a sector, we contribute just 0.46% of total UK domestic transport emissions¹. We fully appreciate that as other modes increase their phase out deployment, the L-Category sector will increase as a percentage of the total. Although this may be the case, the total value of CO₂ we generate will continue to decrease as internal combustion technologies continue to evolve, combined with increased use of things like e-fuels/low carbon fuels.
23. We also contend that, given the minimal emissions of our sector, the role it can and should play in achieving net zero is not being fully harnessed. In our view, the current approach (zero at the tailpipe) is too simplistic in attempting to address a complex problem. The Government must consider the whole life cycle of vehicles and move away from an exclusive focus on zero emissions at the tailpipe.
24. From production through to in use and end of life, L-Category vehicles are shown to be significantly more environmentally friendly than a range of other transport modes, including electric cars. Our [Life Cycle Analysis Study](#)², published in December 2021, demonstrated the environmental efficiency of the sector.

¹ <https://www.gov.uk/government/publications/transport-decarbonisation-plan>

² [Powered light vehicles can enable transport decarbonisation: Life-cycle analysis shows lighter vehicles can enhance contribution of electrification to climate goals | MCIA](#)



25. Comparing the greenhouse gas emission (GHG) performance of L-Category vehicles (sometimes referred to as Powered Light Vehicles (PLVs), which includes PTWs), with larger vehicles which have traditionally been used for a range of operational and leisure purposes, focusing mainly on urban areas, the analysis found that:
- In almost every use case, where the load requirements enable use of a PLV, substantial GHG emission savings were delivered.
 - There are significant GHG gains to be had by moving to smaller and lighter vehicles, combined with progressive electrification.
 - Significant benefits can be gained by using electric zero emission PLVs which require smaller batteries, have lower GHG production impacts and lower energy requirements in use.
 - The biggest savings can be seen when using electric PLVs for intensive commercial operations such as scooter delivery or urban parcel delivery operations, or heavy commuting use.
26. Phasing out ICE PTWs too early could lead to users holding on to their existing, higher emitting vehicles for longer, rather than upgrading to an electric or alternative product as they might do if the industry is given more time to develop and ensure the right vehicles are brought to market.

Economic contribution

27. In the 2021 ACEM-commissioned Oxford Economics report, *The economic importance of motorcycles to Europe*, motorcycle-related activity supported €21.4 billion of output (GDP) across Europe, was associated with 389,000 jobs and €16.6 billion of tax revenues.
28. It further states that 11% of the total contribution to GDP was accounted for by the UK and that for every £1 of GDP generated by the sector, a further £1.80 is supported in other industries.
29. Implementation of the proposed dates risks weakening this contribution. As mentioned, we understand that some significant players in the UK might have to review their UK operations if the dates are implemented. Furthermore, the UK is currently the only nation considering on-road L-Category vehicles with regards to their phase out. Europe, the USA, Japan and China have yet to define phase out dates for L-Category vehicles, with many other countries being unclear about their plans for our sector (see figure 2).

Figure 2: Country L-Category phase out position comparison

Market	Date	Note
EU	Does not specifically define L-Category dates	'European Green Deal' does not mention L-Category but commits to a 55% reduction in greenhouse gas emissions by 2030 and 90% by 2050
US – 49 States	Does not specifically define L-Category dates	



US -California	Proposes 50% of an OEM's CARB Approvals should be zero emission for motorcycles by 2035.	
China	Does not specifically define L-Category dates.	
Thailand	N/A	
Brazil	Proposed ban of 2030, with vehicles powered by bio-fuels to be exempt	Motorcycles/L-Category vehicles not referenced
India	No bans proposed yet, but requirements for a percentage increase in BEVS	Unclear on motorcycle

30. Whilst we appreciate the Government wanting to lead on carbon reduction, it is imperative for our sector (given the size of the market) that we do not end up with a phase out timeline, and therefore subsequent regulation, that is only relevant to the UK. Alignment with other major markets, in particular Europe, is critical to the UK remaining an attractive market to our sector.

31. If this is not the case, it will have a devastating impact on the market. For example, a loss of retail networks would mean thousands of job losses as a consequence of manufacturers withdrawing from the market. Any current or potential future plans to move production back to the UK might also be reversed if the UK market is deemed as having limited or no value, therefore missing out on UK industrial opportunities the Government is keen to take advantage of.

Sport and tourism

32. Five million spectators attended major motorcycle events across Europe in 2019 and 2.5 million individuals attended motorcycle trade fairs and promotional events. In addition, motorcycle sporting events, including a number that took place in the UK, are estimated to have generated €395 million gross value-added contribution to the 2019 European GDP. Furthermore, €33 million was generated through VAT payments on ticket sales, while the procurement of goods and services by the event organisers also stimulated economic activity indirectly to other sectors.

33. It is estimated that race organisers across Europe spent €190 million with suppliers in 2019. In terms of jobs, the major motorcycle sporting events generated the equivalent of 9,000 full time equivalent jobs. In addition to these, there are staff who work at race events on a temporary basis. Apart from the direct costs associated with motorcycle sport events, attendees also spend elsewhere in the economy as they travel to events, stay in hotels, eat in restaurants, and purchase souvenirs. The report shows that every spectator going to major motorcycle races spends on average €250 to attend an event.

34. Many of the events attract international visitors, and in 2019 their expenditure is estimated to have stimulated a €376 million gross value-added contribution to European GDP. 20% of this is attributed to the accommodation and food services sector. Spending of international spectators supported a total of 7,200 jobs, of which 810 were based in the UK. Together, motorcycle sports and events supported a €2.1 billion gross value-added contribution to European GDP in 2019.



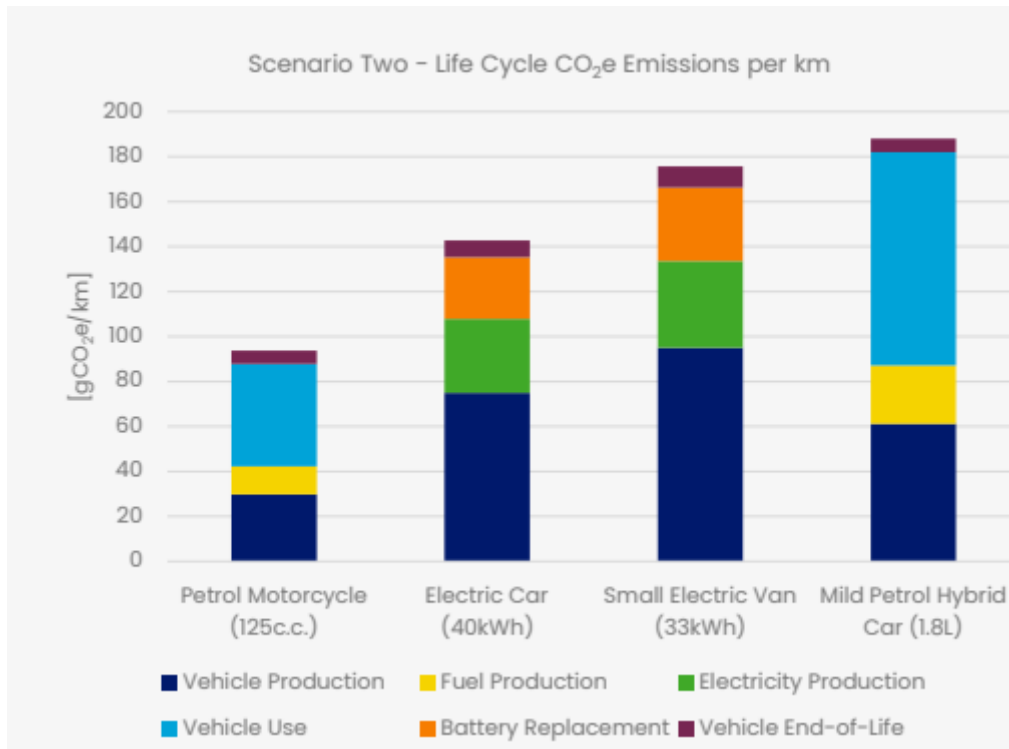
Oxford Economics also estimated that motorcycle sports and events supported 38,400 jobs across the EU-27 and UK in 2019, with 3,000 of these being UK based.

Infrastructure

35. As it stands, the charging/refuelling infrastructure required for L-Category vehicles is not yet sufficient and proceeding with the Government's proposed dates would mean a significant lack of supply compared with current vehicle demand.
36. It is wrong to assume existing infrastructure is appropriate for all L-Category vehicles. Whereas L1-Category vehicles benefit from having removable batteries that can be charged using a standard 3-pin plug, for larger capacity bikes, the infrastructure is not always applicable in the same way it is for cars. Since journeys on large capacity L3-Category vehicles are often used for riding long distances, we remain extremely concerned the insufficiencies of current infrastructure in catering for this use case will mean consumers holding off on switching to electric bikes.
37. MCIA also strongly disagrees with the decision to include L3e-A1 vehicles in the 2030 date and instead calls for it to be included in the L3 and L5-Category phase out date from 2040.
38. For many major UK manufacturers, 125cc PTWs are a significant part of their volumes, which includes leisure bikes in their own right (i.e. they are not just used for commuting or last mile delivery purposes). The consultation shows a lack of understanding about the use cases for these vehicles. Furthermore, bringing forward their phase out is likely to act as a deterrent for new riders wanting to obtain the relevant full licenses. Currently, as identified by the Government and MCIA, there is an issue surrounding people choosing to stay on a Compulsory Basic Training (CBT) certificate. An early phase out date for this segment will only serve to exaggerate this problem and undermine the work of the [Action Plan](#) in helping to liberate this part of the market and ensure more people can access cleaner forms of personal mobility.
39. The life cycle analysis study mentioned above compared an L3 125cc petrol motorcycle, used for local delivery or for single person commuting, with a small battery electric car and a petrol mild hybrid car performing the same local commute, in addition to a small battery electric van being used for local deliveries (see figure 3). The petrol motorcycle was found to exhibit a saving in lifetime GHG emissions per km over the comparator vehicles, particularly the petrol fuelled car, demonstrating the transitional role that ICE PTWs still have to play in getting us to net zero by 2050.

Figure 3: GHG emissions per km over whole lifetime of vehicle





Alternative fuels

40. MCIA's ambition, based on the 'right vehicle for the right journey' concept, and in accordance with a multi-pathway approach, is to continue to offer the market a variety of powertrains, each of which will contribute to decarbonisation.
41. Whilst CO₂ emissions from ICE PTWs continue to be reduced, due to things like new technology and design, the industry will continue to place more electric vehicles on the UK market every year as L-Category vehicles can and must play a key role in the future of our urban and sub-urban transport systems as an affordable and cleaner form of personal mobility.
42. However, the complexity of the L-Category regulatory framework means that what's feasible for some vehicles, isn't feasible for others. This is particularly true when it comes to ensuring zero emissions at the tailpipe.
43. Electric is not a silver bullet for our diverse sector, in particular L3 vehicles, which is why existing fossil fuels and low carbon fuels are important for the foreseeable future to ensure certain segments of the market survive prior to technology being available, enabling a net zero, cost effective and viable longer-term solution.
44. There are currently around 1.34 million PTWs in use in the UK, the vast majority of which still operate using an ICE. While the L1 electric market continues to grow at pace, low carbon fuels could prove an effective way to reduce transport emissions and protect segments of the L-Category sector which are not yet able to adequately adapt to electric powertrains within the timeframe the Government is currently suggesting.



45. This is due to things like the weight of suitably sized electric batteries and the effect these may have on handling and dynamics. As such, trade-offs between weight, range, costs and consumer expectations are still huge determining factors in market volumes for leisure orientated electric PTWs. Therefore, large capacity electric PTWs still have a long way to go before its worth manufacturers' time investing in their development if they aren't going to serve the customer's demands.
46. Low carbon fuels/synthetic fuels have obvious advantages in that they could be used in the running fleet. This means their decarbonisation effects would materialise at the time of availability of the fuel, not just at the time of availability of new vehicles. These fuels could also be supplied via the existing fuel station infrastructure and may not require long lasting and costly implementation of new refuelling/recharging infrastructure.
47. Electrifying higher powered motorcycles in a way that is commercially viable could prove to be far too big of a challenge to meet consumers' needs at this stage given existing technology. The industry must be given the time and help to transition to different powertrains.
48. While electric PTWs will be the predominant solution for urban mobility in the future, PTWs with conventional ICE still have an important role to play. It is important that the UK continues to support the adaptation of the PTW industry, as per our Action Plan, by continuing to fund the research and development of low carbon/synthetic fuels.
49. For industry's part, our members are already exploring alternative, low carbon/synthetic fuels. Although still in their infancy, collaborative projects are taking place to explore the use of hydrogen combustion technologies in PTWs, partnering with the likes of Toyota and with working prototypes already having been revealed in some parts of the world.
50. However, in accordance with the Government's technology neutral approach, it must provide industry clarity on what it considers to be an acceptable level of emissions before such technology can be developed further. There are many benefits to hydrogen combustion technologies, namely the fact there is next to no CO₂ emissions, huge potential to build on current knowledge by carrying over well proven parts from standard ICE PTWs, the ability to maintain riding sensations to that of a petrol-fuelled ICE PTW and durability and maintenance similar to current ICE PTWs.
51. Given the complexities of the sector, manufacturers continue to explore all fuel/drive train alternatives, both as an end game and transitional solution. As mentioned, we are aware of a manufacturer who is developing Hybrid technologies which, whilst reliant on combustion fuels, are likely to offer significant zero emission capability. We urge the Government to consider the role Hybrid can play in our sector, transitionally and as a the end game solution.
52. PTW manufacturers have much smaller economies of scale to support the transition from internal combustion to electric powertrains. More time will be needed for these manufacturers to research and develop robust and technically reliable EV systems in order to provide consumers with high quality products that reflect the higher costs of applying this new technology, and to continue to meet their expectations and demands.
53. Moving forward, it is of paramount importance that policy makers remain genuinely technology neutral in their approach. As the former Minister, Trudy Harrison MP, said to us in a letter, *there can be no one size fits all approach to L-Category*. Decarbonisation is far too important an agenda to be restricted to electrification only. A transitional process, which is what MCIA is calling for, will



go through different stages and so being prescriptive with specific technologies means limiting choice and constraining innovation.

54. Although MCIA is fully supportive of the net zero agenda, we believe a more appropriate approach to take from Government would be to let the industry and market develop naturally and accept the appropriate solutions. In any case, all pathways towards decarbonisation should be supported and exploited as much as possible.
55. Electrification is not the only solution and as expressed above, manufacturers are committed to exploring the opportunities that low carbon fuels might present and how they might be able to develop into a net zero fuel in the future.
56. Current petrol and low carbon alternatives are critical to the sustainability of our industry. Where possible, these should not be cost prohibitive and should be further developed and made available for use in our sector's products for longer (which have a significantly smaller impact on the environment), until current technological barriers for net zero L-Category products are overcome.

MCIA, October 2022

