MCIA Response to Decarbonising Transport – Setting the Challenge

MCIA is the industry body representing the L-Category vehicle sector. L-Category vehicles are more commonly known as Powered Light Vehicles (PLVs) and include Powered Two Wheelers (PTWs), which can be defined as lightweight scooters, motorcycles, tricycles and quadricycles, typically with zero or low-emission power trains. L-Category (PLV)definitions are listed below:

L1 includes 2, 3 or 4 wheel, e-bicycles with a power output up to 1,000 watts (e-bicycles of 250w or less are not L-Cat) and PTWs with up to 50cc petrol engines or up to 4kW alternative power. The rider must wear a helmet. PTW top speed is 28mph (45km/h). On e-bicycles the power assistance cuts out at 15.5 mph (25km/h).

L2 vehicles have 3 wheels (or 4 if the wheels on the same axle are no more than 460mm apart) and 1 or 2 seats. Power is limited to 4kW and the maximum speed is 28 mph (45km/h).

L3 vehicles are the most numerous L-Category, also referred to as PTWs. Sub-divided into 3 main groups, defined by power output. Riders are tested relative to vehicle power and their age and must wear a helmet.

L4 - Category refers to L3 - Category vehicles fitted with a sidecar. Vehicles supplied for UK use must have the sidecar fitted to the kerb side of vehicle.

L5 - Category vehicles share many characteristics with L2 vehicles, but have power in excess of 4kW and top speeds exceeding 28 mph (45km/h). They can have a maximum of 5 seats and a running mass of 1,000kg. They can be enclosed or open.

L6 vehicles have 4 wheels and no more than 2 seats. Their power is capped at 6kW, top speed 28 mph (45km/h) and their running mass is limited to 425kg. They can be enclosed or open.

Vehicles in the L7 Category feature 4 wheels, an enclosed passenger area and a maximum power 15kW. They can have up to 4 seats or 2 seats plus a cargo area. Top speed is limited to 56 mph (90km/h).

PLVs effectively bridge the gap between active travel and longer distance journeys. The sector covers anything bigger than an electrically assisted pedal cycle (EAPC) to just short of a small car. This sector is heavily regulated and has complex licencing requirements. Given there is such a wide range of uses across this sector from personal mobility to light freight, it is surprising that it is omitted from Government policy.

As the trade association for this transport sector, MCIA has clear thoughts and ideas on decarbonising transport and how PLVs can help deliver the environmental changes that Government seek. Therefore, please find below our views as requested.

In 2019, MCIA, with support from the Low Carbon Vehicle Partnership (LowCVP), launched its policy document *The Route to Tomorrow's Journeys.* This document identifies how PLVs are readily available and can easily help Government to meet many of the ambitious targets listed in the various policy proposals, including *Decarbonising Transport: Setting the Challenge (DTStC)*. MCIA struggles to understand why, after much positive feedback from government officials to the evidence that shows PLVs can meet many of the objectives of DTStC, these vehicles continue to be excluded from official documents about innovation and the future of transport.

MCIA and its members are ready and able to help Government realise its aims for decarbonisation, but it is essential that Government listens and embraces the opportunity that PLVs offer. A beneficial first step to this would be to acknowledge and identify PLVs as a mode of transport.

DTStC barely mentions motorcycles, scooters or mopeds and at no point considers any other L Category vehicles. We note that on page 12, the figures for GHG emissions from road transport demonstrate the dominance of the car and shows where the main target area needs to be. It should be noted that PLVs contribute relatively little amounts of GHG. Throughout the document, there is no mention of the relative performance of PTW fleet emissions compared with other motorised transport which we feel should be included.

This unfortunate approach to PTW emissions reporting means that the lower carbon credentials of this mode of transport have been ignored as a potential contributor to the wider aims of decarbonisation and zero tailpipe emissions. The quick win of a reduction in Co2 through the greater utilisation of PTWs as part of transport policy is therefore overlooked.

The SMMT (January, 2020) reported that the average CO_2 emissions in the UK in 2019 for cars was 127.9g/km, which when compared to an EU target of 95g/km for 2020/2021 (ec.europa.eu website: Reducing CO_2 emissions from passenger cars - before 2020) shows that there is still a long way to go for cars to be able to meet this intended average target. However, it is more difficult to establish what the current fleet average emissions are for PTWs due to a lack of data. Nevertheless, it is possible to establish, from registration data held at the MCIA for 2019, what the current averages are for given engine sizes of vehicle and assess this against the current car CO_2 value and the intended target value.

Table – Average CO_2 Petrol ICE Emissions against Engine Size 2019

Motorcycle cc range	Euro emissions Level	Number of vehicles 2019	Average CO_2 (g/km)
48 - 125	**EURO 4**	37,670	58
126 - 250	**EURO 4**	2,503	68.9
251 - 400	**EURO 4**	6,321	83.1
401 - 600	**EURO 4**	4,533	91.4
601 - 750	**EURO 4**	11,070	102.1

Data held by the MCIA on PTW registrations for 2019

This table illustrates the emissions benefits available by swapping a car for a PTW, with all categories beating the EU target. With the introduction of the latest Euro 5 emissions requirements, it is considered highly likely that the emissions stated above will be improved upon, further enhancing the move to PTW vehicles for the control of greenhouse gas tailpipe emissions.

With regard to point 2.7 on page 20, MCIA applauds this ambition, as the potential for unlocking new industries in zero emission tech and R&D is clear. However, we are concerned at the lack of joined up thinking when it comes to wider public and trade policy. The setting of the recently announced UK Global Tariff provided an opportunity to prime the appeal of the UK for zero emission vehicle development. Instead tariffs for electric motorcycles are to remain at the same level as under the current EU External Tariff, which is a missed opportunity that should be further reviewed.

Strategic priority 1 Accelerating modal shift to public and active transport, mentions walking, cycling and cars as current alternatives. There is no mention of the congestion and emission busting properties of the many thousands of journeys made each day on motorcycles, mopeds and scooters.

It appears that PLVs are either linked to cars, or bundled into the generic 'other' category in terms of statistics related to air quality and journey type analysis. For example, on page 12 there are some statistics showing emissions by mode and PLVs are not mentioned.

The DTStC quotes the public's reliance on the private car:

87% of car users in England are of the view that their current lifestyle means they need to own a car. It is also noted that 94% of the journeys by car are under 25 miles, with 58% of them being under 5 miles.[i]

Whilst the DTStC does mention the need for widespread behaviour change, with no clear or realistic alternatives for medium and longer journeys, the public have no motivation to move away from their reliance on private cars. While walking is realistic for up to around 2-3 miles, and cycling for perhaps up to 10 miles the remaining journeys do not need to be made by car. PLVs offer a convenient, cost effective and clean way to travel and should be promoted as such by government in order to encourage greater take up by the public. PLVs are the missing link.

We note that Page 67 of DTStC, point 6.20 states that *engagement on decarbonisation initiatives will continue with each transport mode*. MCIA is the only representative body for the whole of the L category industry and looks forward to introducing Government to the spectrum of innovation and decarbonisation opportunities that this mode offers. There are some fairly quick wins in terms of policy change which would encourage users to switch from cars to PLVs, giving the results that Government need:

- Inclusion of electric PLVs into the salary sacrifice scheme currently enjoyed by electric car users
- Inclusion of all electric PLVs in the home charging grant scheme. Currently only L3 vehicles are included, this should be amended to encompass all L category vehicles.
- Inclusion of L7 PLVs into the electric van grants scheme
- Inclusion of PLVs in a funded trial for low emission freight alternatives.

There are of course many other ideas that MCIA would be happy to share with Government.

MCIA note there are no specific questions for stakeholders, so in order to provide a structured response we have looked at the six strategic priorities listed in DTStC and indicated how PLVs can be used as a solution within these priorities.

Strategic Priority 1 - Accelerating modal shift to public and active transport

MCIA shares the DfT's ambition to reduce reliance on the private car and especially single occupancy journeys.

Our strategy *The Route to Tomorrow's Journeys* (mcia.co.uk/the-route) encourages the process of choosing the right vehicle for the right journey. It is absolutely essential that if effective changes are to be made, there must be recognition that one size does not fit all.

The *Ministerial Foreword of Decarbonising Transport: Setting the Challenge* (DTStC) states that, "Public transport and active travel will be the natural first choice for our daily activities."

Active travel is clearly the best alternative for the health of the nation. However, government policy currently seems to lean towards exclusion of anything other than walking or cycling. Active travel is the best choice for shorter journeys, but walking 5 miles to work is not feasible for many. The distance that people will be able to cycle comfortably will largely be dependent on the road network, the geographical location and their personal health. Again it is not a one size fits all solution, but PLVs are a perfect solution where active travel is not possible.

PLVs are practical and cost effective. They have a better range, and can be used on various road types. They also support the government agenda to free up road space and reduce emissions. Electric PLVs in particular must be acknowledged, they are growing in popularity and as infrastructure and incentives grow, so will the market, with more people seeing the benefits of switching from a car to a PLV.

It is of note that when considering the electrification of a vehicle, an electric PLV has greater benefits than an electric car when considering the power storage requirements, size and complexity (materials required) and the range. Not only that, there are ancillary benefits, such as the reduced infrastructure required to support their use, as many electric PLVs can be charged from a domestic 13-amp socket. It is also common for ePLVs to feature removable batteries that can be charged away from the vehicle, which is a boon for those not living nor working on the ground floor.

Table 1. Examples of Electric PLVs and Specifications

Vehicle Make	Battery Capacity (kWh)	Range (miles) *depending on use	Economy (miles/kWh)	Top Speed (mph)	Weight (kg)
Zero SR	14.4	179	12.43	102	187.8
Super Soco CUX	1.92	40	20.8	28 (restricted)	78
Super Soco CPX	2.7	50	18.5	56	78
Piaggio Vespa Elettrica	4.2	62	14.8	28	115.7
RIDER Model 30 City	1.8	50	27.8	30	180
RIDER Model 75	4.3	75	17.4	75	172
Harley-Davidson LiveWire	15.5	146	9.42	95	249

Reference: manufacturer websites

Table 2. Examples of Electric Cars and Specifications

Vehicle Make	Battery Capacity (kWh)	Range (miles) *depending on use	Economy (miles/kWh)	Top Speed (mph)	Weight (kg)
Nissan Leaf	40	200 (city/mild)*	5	89	1,580
Volkswagen e-Golf	35.8	175 (city/mild)*	4.9	93	1,615
Kia e-Niro	67.1	340 (city/mild)*	5.1	104	1,812
Vauxhall Corsa-e	50	255 (city/mild)*	5.1	93	1,530
Mini Electric	32.6	170 (city/mild)*	5.2	93	1,440

Reference: ev-database.uk/
**City driving / Mild weather*

It can be seen from tables 1 & 2 that one important factor (of many) when it comes to the benefits of an electric PLV over an electric car, is the efficiency, energy used for work done. The electric PLVs show efficiencies of 2 to 3 times that of electric cars. The way in which the vehicles are driven will change the range, therefore direct read-across is difficult, but the trends are clear.

MCIA urges Government to consider how best to incentivise this change and to encourage the behaviour that DTStC outlines and seeks.

MCIA appreciates that when the DTStC was drafted, the effects of public opinion and scientific advice related to Covid 19 were unknown. The encouragement to use a car as the only alternative to public transport and active travel, not only completely ignores the potential contribution of PLVs, but contradicts the aims of the DTStC and will make changes in transport choices far more difficult. In a recent poll carried out by Transport Focus[ii], 60% of respondents said that they would drive more rather than use public transport, once travel restrictions are relaxed. MCIA struggles to understand why small, low capacity private PLVs have not been promoted as a viable and a greener alternative to a private car.

Strategic Priority 2 – Decarbonising how we get our goods

With consumer habits changing, on demand deliveries are now common place. Many deliveries are still being made by partially laden cars or vans. This is not always the most appropriate mode of delivery from a decarbonisation perspective. PLVs have a role to play here too; particularly with low volume goods and food deliveries which cannot be delivered by cycle due to size or weight. Small capacity PLVs are already widely available and being used for food delivery and are increasingly being recognised as an efficient mode of transport for a wide range of services, such as delivering medical supplies or parcels.

National Blood Bikes are known for delivering blood, breast milk and other tissue samples to hospitals around the country using PTWs. Other organisations, such as DPD, are opting to use electric L-Category vehicles for urban deliveries. In their *Delivering a Zero Emission Future* document, DPD highlights that they are using L6e/L7e (light/heavy quadricycle) 'Paxster' vehicles as part of their all-electric delivery fleet operating in urban environments[iii]. PLVs can get around more easily, reducing delivery times and helping to reduce localised and global environmental damage.

Whilst e-Cargobikes have an obvious role to play in the delivery transport mix, it should be noted that the range of PLVs available means that appropriate vehicles can be selected to support the delivery of the specific freight. Some of the larger electric PLVs will be capable of carrying heavier loads over longer distances and therefore are the best vehicle for that type of journey.

The ‘last mile logistics hubs’ which have been discussed by Government over recent times will be well served by small footprint, quiet, electric PLVs. The DfT’s *Future of Mobility: Urban Strategy*, a document which also failed to recognise the benefits that PLVs can bring, refers to innovation around deliveries…*”Innovation that supports the more efficient movement of goods, for instance through the use of consolidation hubs or freight brokerage platforms matching goods and vehicle space, will also be important to reduce congestion.”*[iv]

Strategic Priority 3 - UK as a hub for green transport technology and innovation

The L-Category Industry supported by MCIA is keen to play its part in ensuring that the UK becomes a lead innovator in the green transport arena and our L-Category products are well defined in legislation, with well-regulated standards and user licensing. It is hard to see another way to innovate that does not include these vehicles, their smaller footprint and lighter weights make them perfect to assist with the UK’s ambition to move towards a cleaner greener future.

The range of vehicles available should be seen as tools in a toolbox. The correct tool makes the job easier. This is the same for transport solutions. The journey type will require different solutions for different people and their individual circumstances and capabilities. Inclusion rather than exclusion of all modes is the key to providing viable green alternatives for everyone.

While the £350 million Cycling Infrastructure Fund will inevitably improve the road network for those who are able to cycle, the needs of other road users should not be forgotten.

Work is currently being undertaken by government to investigate whether micromobility modes such as e-scooters should be legalised for use on public roads, with regulations based on those used for e-bikes. However, evolving technology will soon result in these vehicles quickly outgrowing such regulations and so bespoke criteria must be established.

To avoid stifling innovation, we must not restrict small vehicle development by insisting they fit within existing cycling infrastructure. Road space may need to be viewed very differently in future if the evolution of vehicle types is to be encouraged.

Strategic Priority 4 – Decarbonisation of road vehicles

As stated in DTStC*, “transport is now the largest contributor to UK domestic GHG emissions, contributing 28% of the UK domestic emissions in 2018”* (page 10). MCIA acknowledges that in order to meet the ambitious targets that Government has set, major change is needed. Again, MCIA struggles to understand why the benefits of PLVs have not been embraced and promoted.

As part of *The Route to Tomorrow’s Journeys*, MCIA commissioned a modal shift study from single occupancy cars to small electric L-Category vehicles. Significant benefits, both in terms of air quality and road congestion, were demonstrated via air quality assessment and congestion impact studies. The air quality assessment (Air Quality Assessment: Impact of L-Category Vehicles on Emissions, February 2019, Air Quality Consultants) highlighted that:

“The potential impacts of the replacement of private car journeys with journeys made by electrically powered L-Category vehicles on road traffic related emissions has been assessed for a nine-junction study area in Slough. The assessment has considered not only the reduction in vehicle emissions associated with the replacement of conventional private cars with electrically powered L-Category vehicles, but also the reduction in delay brought about by reduced congestion associated with the use of L-Category vehicles.

The assessment has shown that emissions of NOX, PM10 and PM2.5 reduce relative to the baseline scenario; greater reductions in emissions are experienced as the proportion of private car journeys reduces and the proportion of L-Category electrically powered vehicles increases."[v]

The congestion impact study (MCIA Congestion Impact Study, 2019) found:

"*In all scenarios, replacing a percentage of cars with PLVs, reduces journey times. Put simply, the delays are shorter. Replacing 5% of private cars with PLVs would mean a 6.7% reduction in average journey time delays across all modelled junctions. This increases to a 12% reduction in journey time delay when a 10% modal shift is considered. With increased PLVs in the transport mix, the journey time delays for all road users are reduced.*

The benefits of modal shift on a road with fewer junctions was even clearer in the 2011 Leuven Study, which found that a modal shift of 10% cars to L3-Category vehicles would reduce congestion by 40%"[vi]

In addition to the air quality and congestion benefits listed above, the life cycle efficiency of PLVs should not be underestimated. The overall energy employed during a PLVs life (birth-use/service/end-of-life, or cradle-to-grave) is considerably lower than that of a conventional car or van, which is roughly in proportion to the vehicles' mass. This is a crude estimation, based on volume of raw materials, processing of those materials, manufacturing of components, final vehicle assembly process and the component/vehicle surface finish applications, alongside the logistics supporting all of these phases.

Not only do PLVs require less energy during use, but also in the manufacturing stage and during end of life recycling. Using different materials, and less of them, means the embedded energy consumed during PLV manufacture, is significantly less that a battery electric passenger car (there is little overall difference between the embedded energy in different car types, irrespective of powertrain size).

Strategic Priority 5 – Place-based solutions

The idea that solutions should be suitable for the individual issues of an area or region is right at the heart of MCIAs strategy *The Route to Tomorrow's Journeys*. The right vehicle for the right journey is our core message. Ensuring that the right measures are in place which will tackle local and regional problems is important and key to success. Using an evidence based approach is essential to find the most efficient solution for a myriad of local issues.

As an example, clean air zones or zero emission zones will not be possible everywhere. However, where these restrictions are appropriate, they should be introduced with as much consistency as possible, while considering if any local divergences are required.

The acknowledgement in the DTStC strategic priorities that 'a single solution will not be appropriate for every location' is welcomed and in keeping with MCIA's views. Innovative solutions will not be found by doggedly adhering to a one size fits all attitude. Innovation inevitably demands new thinking and new solutions; L-Category vehicles have a place within this new thinking.

Local authorities will be looking to national government policy to help lead the transport decarbonisation strategy. It is therefore absolutely critical that PLVs are included and supported in national policy, allowing local governments to draw on information about all transport alternatives, allowing them to make decisions on what would best suit their local needs.

The DTStC document sets out the ambition around healthy streets:

We will work with industry and communities around the country to develop this plan – to make our towns and cities better places to live, help create new jobs, improve air quality and our health, as well as taking urgent action on climate change.[vii]

While effort is being put towards creating healthy streets, it is important to not lose sight of the needs for business areas to be economically healthy also, something that has also been recognised by TfL.

We have adopted the Healthy Streets Approach to improve air quality, reduce congestion and help make London's diverse communities greener, healthier and more attractive places to live, work, play and do business.[viii]

L-Category vehicles can become a large part of the solution to enable government to deliver this ambition.

Strategic Priority 6 – Reducing carbon in a global economy

MCIA applauds the objective for the UK to lead international efforts in reducing transport emissions.

MCIA works closely with the Low Carbon Vehicle Partnership (LowCVP), who are a co -signatory to our policy document *The Route to Tomorrow's Journey*s.

LowCVP aims to accelerate the shift to low and zero carbon vehicles and fuels and can see the potential of working with MCIA to develop innovative and practical alternatives to supplement the choices for the consumer, thereby tempting them away from larger, more polluting cars.

LowCVP has brought together a range of stakeholders, including academics, to assess the potential opportunities and actions required for L-Category PLVs, mainly focussing on the larger 3 and 4 wheel vehicles.

Both MCIA and LowCVP see opportunities for the UK to take the lead and drive forward zero carbon innovation, which will not only achieve the country's decarbonisation objectives, but also has the ability to boost the UK economy.

MCIA Support and Next Steps

MCIA members include manufacturers and importers of PLVs and as part of your stakeholder engagement, we would be happy to host a session for you talk directly with our members.

MCIA has already requested participation in the Net Zero Transport Council, as it is essential that the PLV sector, which includes all L-Category vehicles, including mopeds, motorcycles and scooters, is properly represented in this forum.

MCIA acknowledges that it will be a challenge to meet the ambitious targets that have been set, but MCIA and its members are ready to work with government to achieve the best possible outcomes in reducing transport emissions.

[i] Decarbonising Transport: Setting the Challenge, DfT, Page 17
[ii] https://www.transportfocus.org.uk/research-publications/publications/travel-during-covid-19-survey/
[iii] https://www.dpd.co.uk/content/about_dpd/DPD%20Smart%20Urban%20Delivery%20Strategy%202020 19-2021.pdf
[iv] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/846593/future-of-mobility-strategy.pdf Page 45
[v] https://mcia.co.uk/en/the-route
[vi] https://mcia.co.uk/en/the-route
[vii] Decarbonising Transport: Setting the Challenge, DfT, Page 5
[viii] https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets