



**Zemo
Partnership**
Accelerating Transport to Zero Emissions

How big is micromobility?

Powered Light Vehicles – Future of Regulations

Andy Eastlake – CEO

28 March 2023

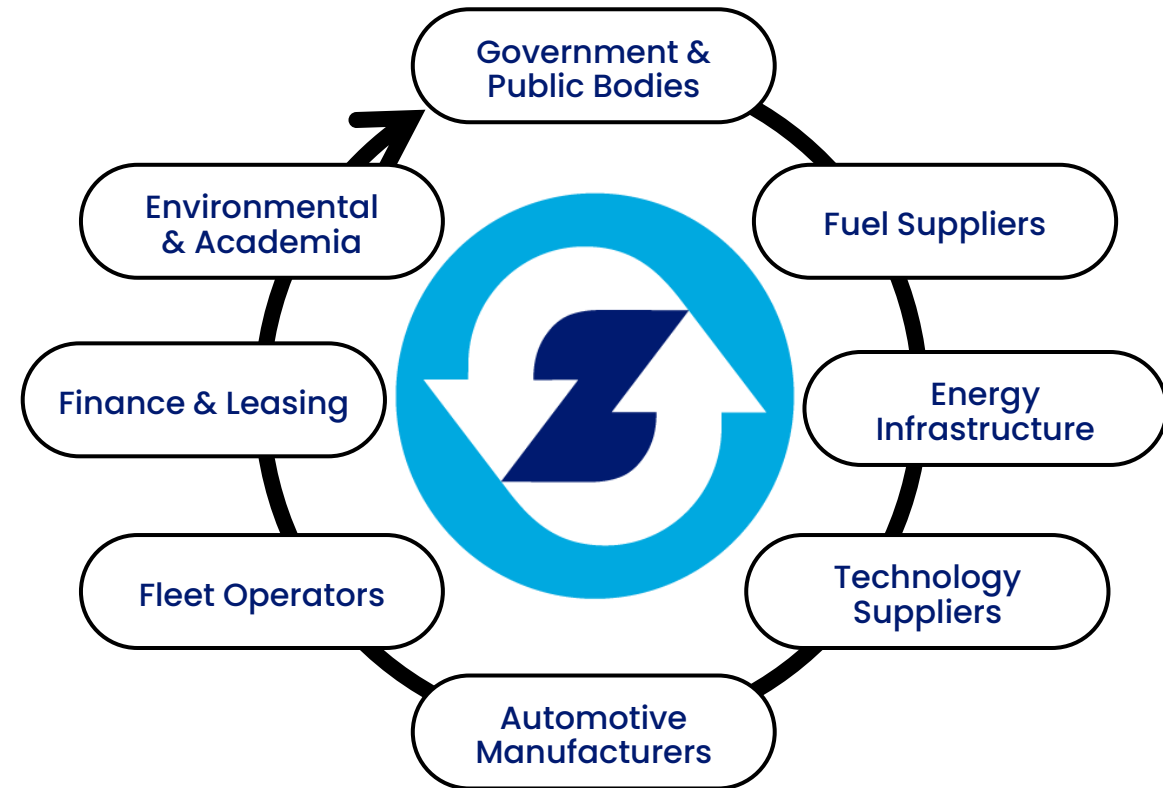
PACTS Spring Conference 2023

Accelerating transport to zero emissions

Previously LowCVP (2003-2021).

An independent, non-profit partnership that brings together government, industry and a wide range of expert stakeholders in the field of zero-emission mobility.

The Partnership plays a key role in helping the UK Government to deliver its zero carbon transport strategy, with the objective of ensuring that the UK takes a leading role in the global shift towards low & zero carbon transport.



Presentation outline



1. From 'Toys' to 'Vehicles' – MMV, PLV, L Category, Powered Transporters & Scooters
2. New Mobility and PLVs – the Opportunity and Action plan
3. Working together – Zemo, MCIA, EST & NVN
4. Why Zemo? – Sustainable zero emissions mobility
5. Regulating innovation or Innovating regulations
6. Bringing people with us – don't forget the user and the terminology
7. Regulatory gaps & opportunities
8. Getting involved – The PLV Community

From 'Toys' to 'Vehicles' – What to call them?

Micromobility: The use of small mobility devices, designed to carry one or two people, or 'last mile' deliveries. E-scooters and e-bikes are examples.



If it has a motor and is used on road – it's a **Motor Vehicle**

Unless its an exempted – EAPC, Trial eScooter, Mobility Scooter

The definition of “motor vehicle” as set out in the Road Traffic Act 1988 is “any mechanically propelled vehicle intended or adapted for use on roads”. There is case law confirming that powered transporters fall within this definition (see section 8 of this information sheet).

1. Powered light weight vehicles (PLVs) with two, three or four wheels are classified in seven groups under the L-category. The groups are based on weight, power output, number of wheels and seating layout. Familiar L-category vehicles include mopeds and motorcycles, however, the category also includes motor tricycles, quad bikes and quadricycles.

What are ze PLVs?

Zero-emission powered light vehicles (L-category) two, three and four-wheel vehicles

7 groups differentiated by power output, number of wheels and weight

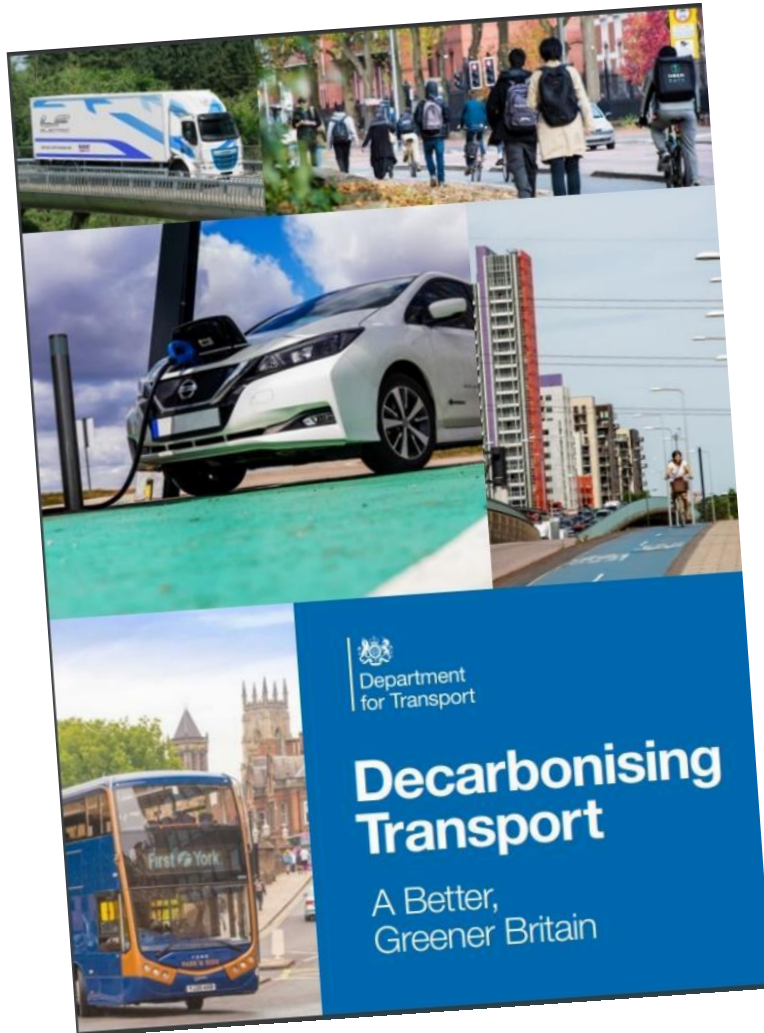


L1	L2	L3	L4	L5	L6	L7
Moped 28mph max 4kW max	3 wheeler 28mph max 4kW Max U/L ≤ 270kg	Motorbike	Motorbike and sidecar	3 wheeler U/L ≤ 1000kg	4 wheel 28mph max 6kW Max	4 wheel U/L ≤ 400kg (passenger) U/L ≤ 600kg (goods)
16+ Bike licence / CBT	16+ Bike licence / CBT	17+ (depending on power) Bike licence	17+ (depending on power) Bike licence	Full car licence (21+)/ Bike licence dependent on power)	17+ (depending on power) Bike licence/ Full car licence	Full car licence

A light weight and often smaller, lower cost and zero emission alternative to traditional vehicles

PLVs & Transport decarbonisation

On the Government radar now (though called LPV !)



Commitment

We will deliver an action plan this year to build new UK opportunities for zero emission light powered vehicles

Innovation in urban logistics and personal mobility can generate substantial industrial opportunities for the UK, as the world transitions to greener transport systems. The opportunities for zero emission light powered vehicles (ZELPV) are enormous. We will build on our existing support in this segment, such as with the plug-in motorcycle grant, to benefit urban logistics and wider mobility and look to grow a new UK industrial supply chain. We will use Zemo Partnership's strategic partnership with the Motorcycle Industry Association (MCIA) to stimulate and coordinate activity in this area and publish options to develop this at national and local level this year.

Commitment

We will lead by example with 25% of the government car fleet ultra low emission by December 2022 and 100% of the government car and van fleet zero emission by 2027

Government will ensure one in four of the central government

**Zero emission
light powered
vehicles**

Powered light vehicles are two, three and four wheeled passenger or cargo vehicles. They are smaller and lighter than many other vehicle types and so can have a significant impact on urban transport systems, particularly when used in place of other forms of low occupancy vehicles. Their size also makes them complementary to increased public transport use and the growth of cycling and walking infrastructure.

New Mobility and PLVs – the opportunity and Action Plan



In facilitating innovation in urban mobility for freight, passengers and services, the Government's approach will be underpinned as far as possible by the following Principles:

- 1 New modes of transport and new mobility services must be safe and secure by design.
- 2 The benefits of innovation in mobility must be available to all parts of the UK and all segments of society.
- 3 Walking, cycling and active travel must remain the best options for short urban journeys.
- 4 Mass transit must remain fundamental to an efficient transport system.
- 5 New mobility services must lead the transition to zero emissions.
- 6 Mobility innovation must help to reduce congestion through more efficient use of limited road space, for example through sharing rides, increasing occupancy or consolidating freight.
- 7 The marketplace for mobility must be open to stimulate innovation and give the best deal to consumers.
- 8 New mobility services must be designed to operate as part of an integrated transport system combining public, private and multiple modes for transport users.
- 9 Data from new mobility services must be shared where appropriate to improve choice and the operation of the transport system.



Working together

For several years now Zemo has been working with the key players in this sector.

MCIA – the trade body for the whole L category Sector – Experts on the regulations, licensing, EU activity and the PLV market.

Energy Saving Trust (EST) – produce the Local Authority Toolkit and support LAs with low and zero emission transport advice – PLVs have been incorporated into their guidance.

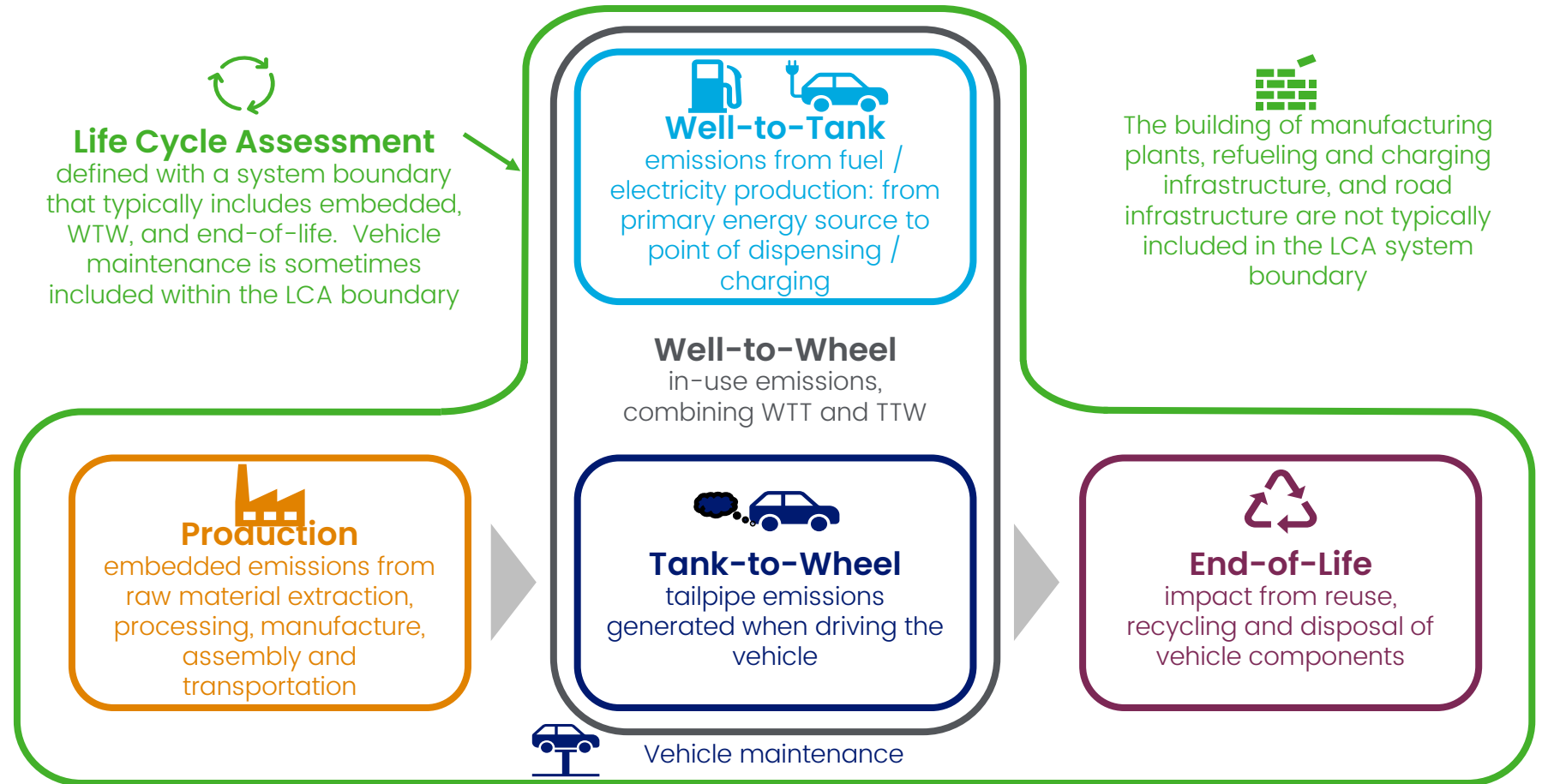
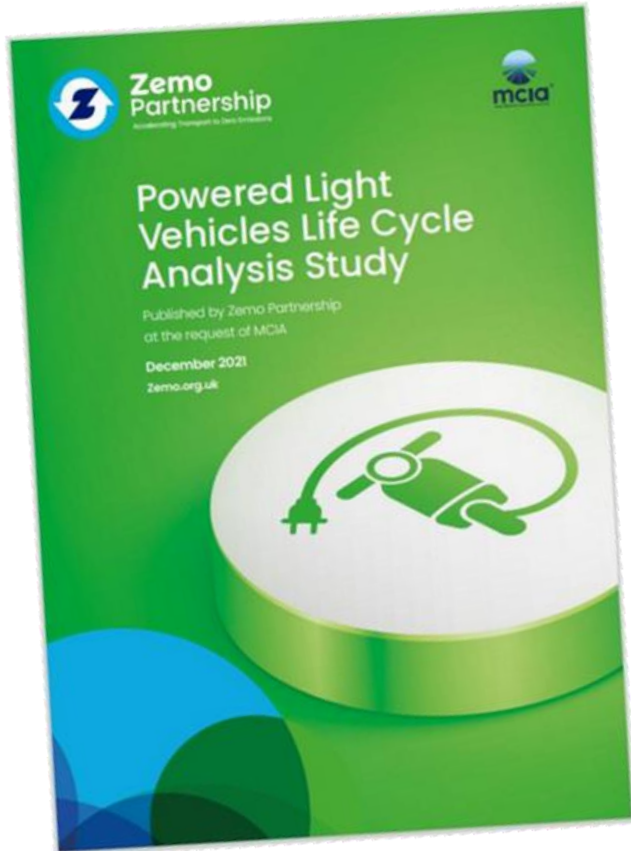
Niche Vehicle Network (NVN) – Support small volume vehicle manufacturers in UK and recently ran a PLV focussed grant funding programme with Zemo.

Vehicle Manufacturers – most are members of MCIA and many are members of Zemo, supporting the development of regulations and standards.



Why Zemo?

Sustainable transport from cradle to grave



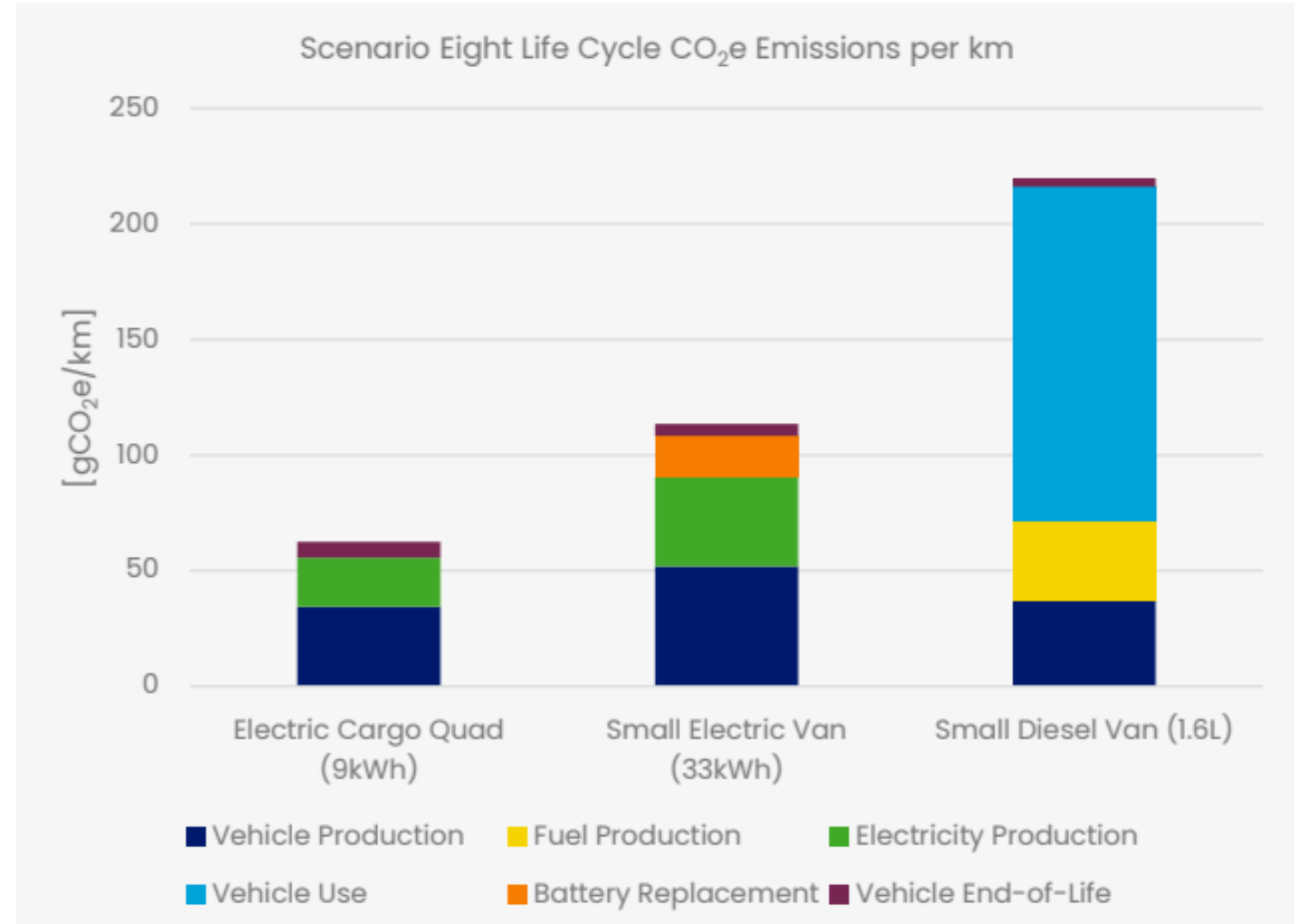
Life Cycle Analysis (& assumptions!)

8 scenarios evaluated e.g.

Scenario 8:

Inner city & urban delivery

UK electricity (2020)



PLV Action Plan



4 Key Themes – 10 Key Actions.

- Supply ahead of demand
- Drive demand by stimulating the market
- Improve & ease access to the sector & use
- Increase integration & infrastructure



Regulating Innovation v Innovating Regulations



Across the PLV (L Category) sector there are a huge range of vehicles and users

We need the 'Right Vehicle for the Right Journey'



A REVIEW OF EXISTING L-CATEGORY VEHICLE REGULATION TO ENSURE IT REMAINS FIT FOR PURPOSE AND CATERS FOR THE EVOLUTION OF FUTURE ZERO EMISSION PLVS, INCLUDING ASSESSING THE POTENTIAL FOR A NEW VEHICLE CATEGORY

Supported by the 'Right regulations for the Right users'

SIMPLIFYING THE EXISTING LICENSING REGIME ACROSS ALL L-CATEGORY SEGMENTS TO IMPROVE ACCESS TO ZERO EMISSION PLVS FOR A WIDER SECTION OF THE COMMUNITY, INCREASING ACCESS, UPTAKE AND ADOPTION



Bringing people with us

Industry and infrastructure



ENGAGING WITH INDUSTRY TO ENSURE ZERO EMISSION PLVS ARE CONSIDERED AND INCORPORATED INTO THE DEVELOPMENT OF THE EV CHARGING INFRASTRUCTURE

Key stakeholders

CREATING A FORMAL L-CATEGORY COMMUNITY TO ENGAGE WITH THE GOVERNMENT AND MONITOR THE DELIVERY OF THIS ACTION PLAN



Local Authorities



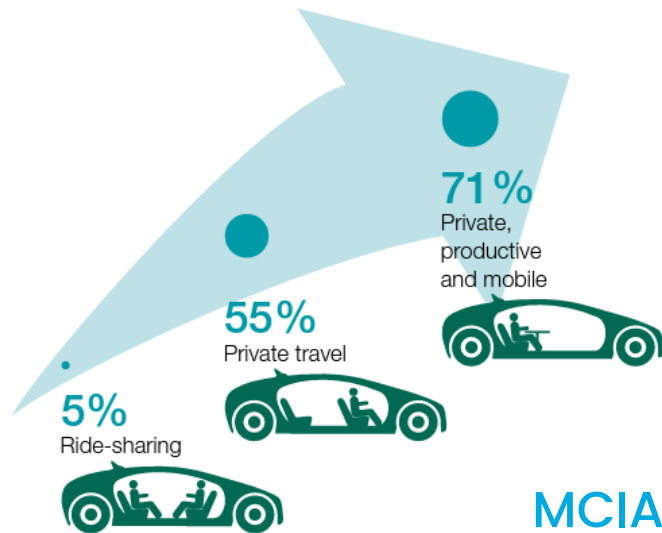
ENGAGING WITH LOCAL AUTHORITIES THROUGH THE LOCAL AUTHORITY TRANSPORT DECARBONISATION TOOLKIT TO ENSURE ZERO EMISSION PLVS FORM PART OF AN INTEGRATED TRANSPORT SOLUTION FOR THE UK

Regulatory Gaps/Opportunities




CO₂ regulations drive conventional fuel efficiency – But there is no regulation (e for labelling) for electricity efficiency – Vehicles? or Chargers?

Figure 12 Results of exploratory analysis into the effect of self-driving vehicles on road traffic growth between 2015 and 2050⁹⁰



Source: DfT, Road Traffic Forecasts 2018

DfT analysis highlights autonomy has the potential to create more traffic and congestion if we don't regulate and manage the transition and behavior/use.

PLVs and micromobility could be a critical part of the integrated solution, done well.

MCIA is working with DfT DVLA DVSA to review licensing across the sector with a core aim to help enable more users to access a wider range of mobility options with the right safety regime of Training & PPE for the vehicles and use.

The PLV community – take part

PLV Village at CENEX – LCV2022



Thank you



**Zemo
Partnership**
Accelerating Transport to Zero Emissions

Any questions? Please get in touch

Andy Eastlake

CEO

E: andy.eastlake@zemo.org.uk

T: 020 3832 6072

Interested in joining the Partnership?

Carolyn Webb

Membership Coordinator

E: hello@zemo.org.uk

T: 020 3832 6070

Zemo Partnership, 3 Birdcage Walk, London SW1H 9JJ

T: +44 (0)20 7304 6880 | E: hello@zemo.org.uk  [@Zemo_Org](https://twitter.com/Zemo_Org) | www.zemo.org.uk

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Powered transporters

Updated 13 July 2020


It is illegal to use a powered transporter:

- on a public road without complying with a number of legal requirements, which potential users will find very difficult
- in spaces that are set aside for use by pedestrians, cyclists, and horse-riders; this includes on the pavement and in cycle lanes

Any person who uses a powered transporter on a public road or other prohibited space in breach of the law is committing a criminal offence and can be prosecuted.

In facilitating innovation in urban mobility for freight, passengers and services, the Government's approach will be underpinned as far as possible by the following Principles:

- 1 New modes of transport and new mobility services must be safe and secure by design.
- 2 The benefits of innovation in mobility must be available to all parts of the UK and all segments of society.
- 3 Walking, cycling and active travel must remain fundamental to a sustainable transport system.
- 4 Mass transit must remain fundamental to a sustainable transport system.
- 5 New mobility services must lead the transit system.
- 6 Mobility innovation must help to reduce congestion on road space, for example through sharing of road space.
- 7 The marketplace for mobility must be open and deal to consumers.
- 8 New mobility services must be designed to integrate with the existing transport system combining public, private and multi-modal.
- 9 Data from new mobility services must be shared to improve the operation of the transport system.

Vehicle Type	Common Sub-categories	Common Technical Detail	Other Common Specifications
L1 – Light two-wheel powered vehicle 	L1e-A: Powered Cycle	<ul style="list-style-type: none"> • 2, 3 or 4 wheels • Pedals • Power less than or equal to 1000W • Type Approval required • Power assist cuts off at 15.5mph 	<ul style="list-style-type: none"> • Rider must wear a motorcycle helmet • Subject to VED, MoT & insurance • Registered and carry a number plate <p>NB L1e vehicles can look similar to sub-250w electric bicycles, which can result in exploitation of the regulations</p>
	L1e-B: Two-wheel moped	<ul style="list-style-type: none"> • Two wheels • Up to 50cc if Positive Ignition Combustion Engine or Power up to 4kW • Pedelecs capable of more than 25km/h (15.5 mph) • Maximum speed 28mph 	<ul style="list-style-type: none"> • Rider must wear a motorcycle helmet • Subject to VED, MoT & insurance • Registered and carry a number plate • 3 or 4 wheelers are permitted in this category, but only in the case of "twin wheel" vehicles, where two wheels mounted on the same axle have a distance between the centres of their areas of contact with the ground equal to, or less than, 460mm

Rules for class 3 mobility scooters

Class 3 are the only types of mobility scooter or used on the road. They must have the following:

- a maximum unladen weight of 150kg (or a maximum weight of 200kg when carrying necessary user equipment and supplies)
- a maximum width of 0.85 metres

- a maximum speed of 4mph
- a maximum speed of 8mph
- an efficient braking system
- front and rear lights and reflectors
- hazard warning indicators able to operate as a hazard warning system

Mobility scooter pulled over by police after travelling at 8mph on A5 dual carriageway

Officers spotted the buggy rider putting their life at risk as they slowly travelled at 8mph along the A5 between Shrewsbury and Wellington, Shropshire

 Bookmark  SHARE   


(Image: West Mercia Police / SWNS)

Welcome to the Zemo & MCIA Powered Light Vehicle Community



Shaping the future of zero emission lightweight transport

Bringing users, manufacturers, central and local Government and other key stakeholders together to drive forward the initiatives, policies and innovations necessary to realise the full potential of zero emission Powered Light Vehicles.

This community will work alongside the **UKM** group established by MCIA and provide an invaluable independent platform for debate and collaboration; both championing what's already been achieved today whilst assessing and accelerating what's now being delivered through the Government-endorsed Zemo & MCIA '**PLV action plan**'.

Other benefits of zePLV's

Congestion

Replacing 20 per cent of light goods vehicles with zePLVs would lead to a 4.3 per cent reduction in journey time delays, while replacing 50 per cent would lead to a 10 per cent reduction in delays.

Source: Local Transport Projects, 2019, L-Category Vehicles Congestion Impact Study.

Servicing and maintenance

zePLV's will have lower servicing costs than ICE vehicles due to the reduced complexity of the powertrain

Warranties

Many zePLV's are offered with longer warranty periods up to 7 years

Lease costs

Extending lease periods to match warranty would reduce costs

AOB

Licensing

L1 Moped 28mph max 4kW max	L2 3 wheeler 28mph max 4kW Max U/L ≤ 270kg	L3 Motorbike	L4 Motorbike and sidecar	L5 3 wheeler U/L ≤ 1000kg	L6 4 wheel 28mph max 6kW Max	L7 4 wheel U/L ≤ 400kg (passenger) U/L ≤ 600kg (goods)
16+ Bike licence / CBT	16+ Bike licence / CBT	17+ (depending on power) Bike licence	17+ (depending on power) Bike licence	Full car licence (21+) or Bike licence (age dependent on power)	17+ (depending on power) Bike licence or Full car licence	Full car licence

Fine details not included for the sake of clarity.

See <https://www.gov.uk/ride-motorcycle-moped/bike-categories-ages-and-licence-requirements> for full requirements