

Micromobility

a UK Roadmap

Summary



Executive Summary

“Powered Micromobility Vehicles” or ‘PMVs’ (those under ~230kgs unladen weight) offer a huge opportunity to decarbonise transport, reduce congestion, improve air quality and reduce car-dependence. The global market for these vehicles is growing exponentially but the UK is behind in adoption and our vehicle developers have a market share of less than 1% as a result.

This document sets out proposals which will address these issues, unleashing Micromobility innovation in the UK.

Our work has shown that **there is support for PMVs across stakeholders when standards are improved, and regulations tailored to different vehicle form factors.** The proposals in this document pave the way for the UK to realise the benefits of PMVs, and to move from laggards to leaders in this field.

The key finding is that **one-size does not fit all** when it comes to the needs of, and sensible rules for future PMVs. Around key factors such as the minimum age of users and maximum speed of these vehicles, there is variation in what is

considered appropriate from one form factor to another, and legislation must cater for this.

The work undertaken by WMG, at the University of Warwick, with Cenex, and supported by Transport Research Laboratory (TRL) and the Motorcycle Industry Association (MCIA) over the last year has formed a timeline of actions (Figure 3) which sees the first new PMV type on UK roads as early as mid-2023, with two new types following behind after consultation and trials respectively.

The headline proposals are;

- ▶ Create a new vehicle class in Primary legislation, opening up the opportunity for new vehicle types to be created via Secondary powers
- ▶ Legalise high-quality eScooters using Secondary legislation, with a requirement for registration and type-approval of these vehicles
- ▶ Consult on legalising light electric cargo vehicles as the second new ‘type’ within Secondary legislation
- ▶ Use new Secondary powers to trial other new types, such as light electric mopeds, as well new infrastructure at scale
- ▶ Ensure training for Micromobility vehicles is available to all children by the age of 14 – such as a broadened Bikeability Level 3 course
- ▶ To ensure the roll out is accessible and inclusive, provide guidance material for local authorities, support innovation programmes, and subsidise access for those who need adapted Micromobility vehicles.

The proposals also enable other new types to follow, supporting the next generation of PMVs with a more agile trialling regime to unleash innovation in the UK which until now, has needed to leave for other countries in order to succeed.



¹ SAE definition J3194

² 20200316_EY_Micromobility_Moving_Cities_into_a_Sustainable_Future.pdf (voiscoters.com)

³ Vivid Economic research for Innovate UK, 2021

⁴ “TAUR had planned to launch in London. However, the UK remains the only country in the G7 yet to legalize privately-owned e-scooters” - Taur Technologies secures £1.3 million Seed investment from Trucks VC - UK Tech Investment News (uktechnews.info)

Discussion

A full discussion of the rationale for the proposals, along with the process followed and sources used is available in the full report [here](#) - this section provides a brief overview.

The new class in Primary legislation is proposed to have an overarching speed limit of 28mph (45kmph), to strike the right balance between ring-fencing these vehicles as low-speed alternatives to cars and vans only, whilst not over-constraining future vehicle types. In this work we identified three types which are all limited to at or below a 20mph maximum speed, but future vehicles such as faster ebikes ("pedelecs" as they are known in Europe), or faster light mopeds could offer further opportunity to reduce car use for short journeys but would require parliamentary ascent to enable if a lower limit were specified at this time.

The first new vehicle type enabled by these proposals is eScooters, but this should not be mistaken with the wide range of products seen on our streets today. This is a class of high-quality, rigorously-tested machines with registration marks and unique identification. In addition to enabling a market in approved scooters to flourish, new innovative concepts would also be enabled (see example in Figure 1).

The second new vehicle type proposed is Light Electric Cargo Vehicles. Like the eScooter, this emerged from our work with clear latent demand and industry backing. Despite there being many of these vehicles in operation illegally already today (due to the presence of a throttle allowing them to be propelled without pedalling), this new type sets a high bar for safety and product integrity, with a

proposal for consultation followed by legalisation. This non-pedal-assisted vehicle paves the way for much wider adoption of lightweight delivery vehicles in place of cars and vans. Once again, in addition to enabling a market in type-approved versions of vehicles seen today, new innovative concepts would also be enabled (see example in Figure 2).

The third new type proposed is a new "Electric Light Moped" type, identified by the motorcycle industry via the MCIA as a natural pathway to powered-two-wheelers in the current "L-Category" road vehicle regulations. Subject to trials to confirm its suitability for cycleways, this could enable significantly lower impact journeys than by car, over potentially longer distances.



Figure 1 - An innovative concept enabled by these proposals



Figure 2 - Polestar final-mile delivery vehicle concept

The trialling of new types like the Electric Light Moped is enabled by the powers set out in Primary legislation. After this, **Secondary legislation may be used to support trials and studies** to be conducted as need arises, representing a far more agile opportunity for regulations to evolve in the future than has been possible to date. If these proposals are adopted, the UK is positioned to trial and learn on the front foot with transport innovation once again.

Scaled trialling should be a key part of major transport planning and decision-making.

This applies not just to the vehicles, but to infrastructure design and integration. Infrastructure must work hand-in-glove with new PMVs, if adoption potential is to be realised.

An example of how these proposals support this development could be the topic of lower speed limits in densely packed urban centres, and higher limits elsewhere. Can speeding in cycle lanes be policed effectively? Could it be enforced with technology? Could this allow vehicles such as Electric Light Mopeds or even lower L-Segment vehicles which have the capability to travel faster than current modes in that area, to use that infrastructure making them 'vulnerable road user lanes' rather than cycle lanes? - all of these questions require trials or technology, infrastructure and vehicles to learn and refine proposals before changing transport systems across the nation and these proposals enable that innovation to flourish.

Whilst these proposals are a critical enabler to this future, it is acknowledged that legislation on vehicle types alone will not be sufficient to support adoption by the 'wider majority'. There are key factors that, as with active travel modes, will require support through research, policy decisions and targeted funding.

The key topics outlined and reinforced many times in our work were;

Inclusive and accessible

Inclusivity, accessibility, and equitability are fundamental to enabling PMVs to displace cars; there is no reason why PMVs cannot be all of these things, but policy must consider each change carefully with these critical factors in mind. These principles must be maintained for both users and non-users of PMVs; recognising that PMVs will not be suitable for all whilst ensuring no direct or indirect negative impacts for anyone. The proposals in this document seek to directly enable wider adoption, with opportunities for two person Micromobility vehicles, and wheelchair-attached vehicles included in the recommendations.

Infrastructure is critical

We must make space for PMV in our public realm, this includes segregated and safe PMV routes, and secure and available parking. The trialling opportunities enabled by these proposals should be used to develop new and innovative solutions to make lower-impact journeys as easy as practicable.

Multimodal Journeys must be enabled

We must ensure a joined-up approach to sustainable transport options, so that PMVs, active travel and public transport combine to present a viable and attractive alternative to personal car usage. The opportunity for PMVs to lead to modal shift is multiplied many times if they can be combined with mass-transit over longer distances.

Behaviour change needs a joined-up approach

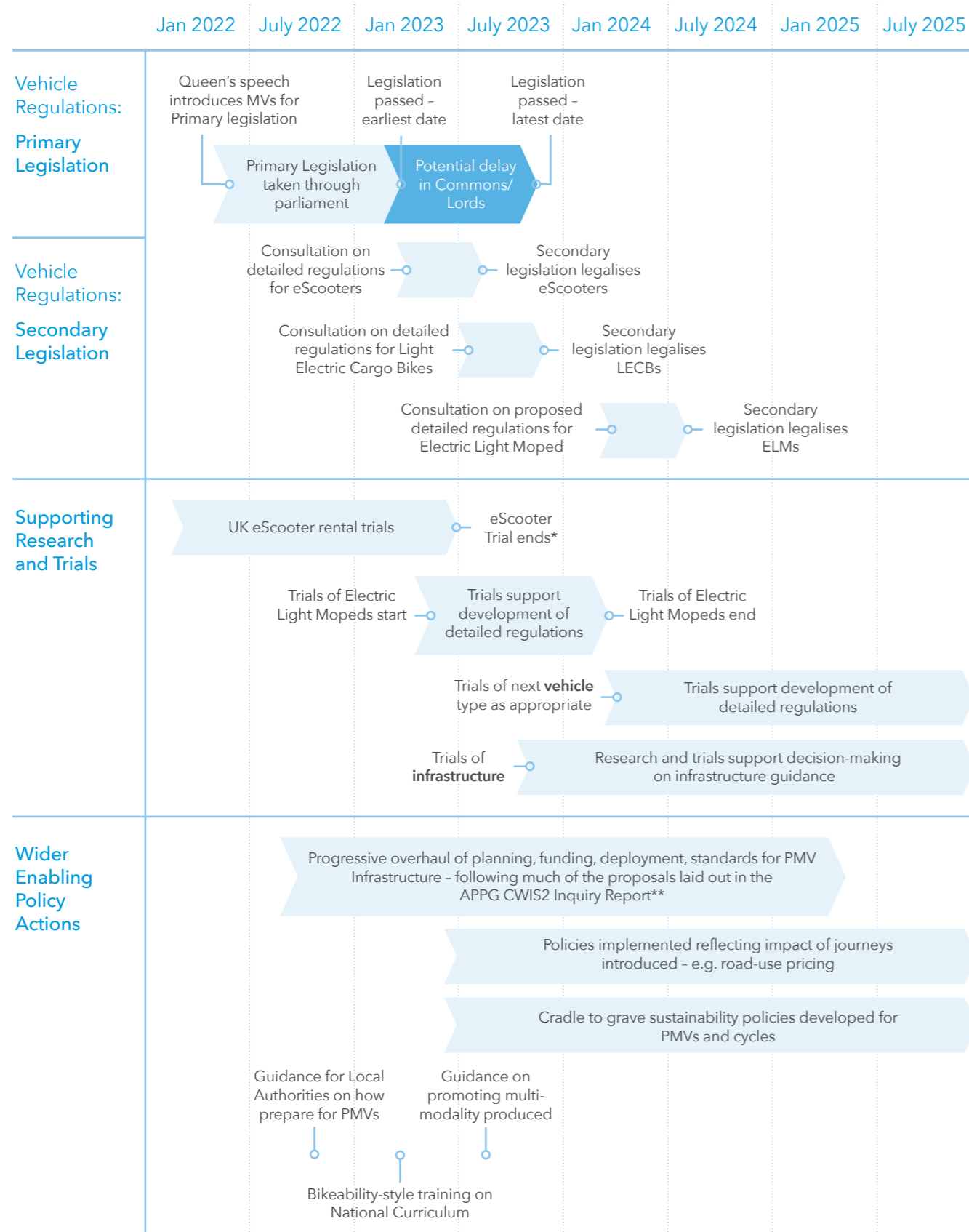
This future state represents a culture shift. Whilst many are desperate to enjoy these vehicles today, for others PMVs and active travel need further work if they are to present as a more attractive option to car use. In practical terms this means ensuring 'sticks' - e.g. ULEZs are introduced alongside 'carrots' - e.g. redesignation of space for cycles and PMVs with increased secure storage, and financial incentives to encourage adoption and use of active travel and PMVs.

⁵ www.linkedin.com/pulse/micromobility-uk-time-widen-our-innovation-john-fox

⁶ Polestar Unveils Last Mile Delivery Vehicle - Re:Move - The Detroit Bureau

Timeline

Figure 3 - Proposed Roadmap for Powered Micro Vehicle Adoption in the UK



New Vehicle Types

NOTE: The full version of this report ([available here](#)) provides rationale and greater description for each entry in the table below:

Variable	eScooter regulations	Light Electric Cargo Vehicle	Electric Light Moped
Maximum Speed	15.5mph (with potential for lower speed limits in specific areas where riders may encounter more hazards e.g. shared spaces)		20 mph
Maximum Power	500W rated	2kW rated	1kW rated
Weight Limit	55kgs (including battery without rider)	Max gross vehicle weight capped at 600kg.	As declared by manufacturer (no type limit)
Type Approval	Required. Independent testing of some features, self-certification of others to balance cost and risk of non-compliance		
Vehicle Registration	Vehicles required to be registered - via VIN and registration mark.		
Licensing/Training	No licence required, though Bikeability-style training strongly recommended and made available to all children before turning 14		CBT License
Minimum Age	14+	16+	16+
Vehicle Tax	Not required		
Vehicle Insurance	Not required, however if deemed to be required subject to consultation, this should be via annual flat fee payable online for third-party liability		
PPE requirements	Strongly recommended, but not mandatory		Motorcycle helmet mandatory
Enforcement	New civil offences created to allow PCSOs to issue fines for issues such as riding on pavements Criminal offences for more serious issues (e.g. cloning a scooter VIN or number plate) and riding under the influence of drink or drugs		



*this assumes eScooter trials are extended again to meet legalisation date to avoid a break in continuity of service for those now relying on scooters.
 **(<https://allpartycycling.org/wp-content/uploads/2021/09/APPGCW-indd-3.pdf>) - many of the proposals around infrastructure in the APPG report on "Reaching Our Active Travel Potential" were raised again in our workshops, reinforcing their recommendations. The cautionary note being that focussing on only 'active' travel risks missing many of those in the 'early and late majority' of adopters who may prefer powered alternatives to the car.



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