Written evidence submitted by Bolt

I am delighted to enclose Bolt's submission to the Transport Committee inquiry, *'e-scooters: pavement nuisance or transport innovation'.* Bolt welcomes this inquiry, and would like to request that its UK Manager, Sam Raciti, be called to give evidence in front of the committee when it hosts an oral evidence session in the coming weeks to share experiences of operating rental schemes across Europe.

By way of background, Bolt has accelerated the deployment of dockless electric scooters in Madrid, Malaga, Faro, Tallinn, Tartu, Riga, Vilnius, Kaunas, Klaipėda, Warsaw, Krakow and Bratislava. Bolt is proud to have worked in collaboration with regulators and governments to develop sound, evidence based transport policy across the world is excited to participate in trials across the United Kingdom.

As stated in our executive summary, this inquiry is now vital; the key mechanism by which MPs can scrutinise the upcoming expanded trial scheme announced by the Department for Transport (DfT) in May 2020. Bolt strongly believes that if regulated poorly, electric scooters do have the potential to become a pavement nuisance. Therefore it is essential the Committee deliberates on the future regulatory framework, which is likely to be considered over the 12 month trial period outlined by the Department to prevent this from occurring. This inquiry and its conclusions will also help to prevent the 'cliff-edge' scenario which may occur when trials finish and legislation for longer term legalisation has not been adequately investigated.

Bolt looks forward to the forthcoming evidence sessions to discuss this transformative transport policy innovation.

Bolt response to the Transport Select Committee inquiry *'Electric scooters: pavement nuisance or transport innovation?'*

1. About Bolt

Bolt, founded in 2013 in Estonia, is the largest European, multi-modal, transport-on-demand platform; serving more than 30 million users in 35 countries and 150 cities around the world, mainly in Europe and Africa. Bolt is the largest European player in the urban mobility space and operates in ride-hailing, the rental of electric scooters and electric bikes, and the delivery of meals markets. Building on the experience of its first micromobility launch in Paris in 2018, Bolt has accelerated the deployment of dockless electric scooters in 13 cities including Madrid, Malaga, Faro, Tallinn, Riga, Vilnius, Warsaw, Krakow, Bratislava and Stockholm to name but a few. Bolt electric scooters are also expected to be launched in cities across Norway later this year.

Bolt has recently introduced a new custom-built electric scooter for extra durability, safety, sustainability and ease-of-use. Bolt owns the whole supply chain, manufacturing and testing, thus being able to control the highest quality of all components. Early evidence indicates that the life-span of the Bolt electric scooter is 36 months, which is well beyond the competition. Bolt's goal is to ensure each electric scooter lasts up to 10,000 rides. In the UK, Bolt has operated Private Hire in London for a year — offering choice and competition to the established ride-hailing providers in the capital. Bolt has a long history of working in collaboration with regulators and governments to develop sound, evidence based transport policy across the world.

Bolt welcomes the Transport Select Committee's inquiry review; and is keen to contribute to this groundbreaking body of work. This inquiry and the recently announced expansion of trials will ensure the UK captures the benefits of this urban mobility innovation, and remains at its forefront by introducing a modern, flexible regulatory regime for electric scooters in the UK. Bolt is contributing by providing its expertise gleaned from operating electric scooter schemes across Europe.

2. Executive summary

- This inquiry is now vital; the key mechanism by which MPs can scrutinise the upcoming expanded trial scheme announced by the Department for Transport (DfT) in May 2020. The inquiry is also critical for deliberating on the future regulatory framework, which is likely to be considered over the 12 month trial period outlined by the Department.
- The results and issues identified by trials, in addition to the report produced by this committee and the Future Regulatory Review will form the basis of legalisation for personal use of electric scooters on the road.
- This inquiry will also help to prevent the 'cliff-edge' scenario which may occur when trials finish and legislation for longer term legalisation has not been adequately investigated.

The onset of the Covid-19 pandemic has resulted in reductions in public transport capacity across the UK, including an 85% reduction in London[1].

- This likely to lead to an increase in private car use as individuals shift away from public transport. The introduction of a green-at-point-of-use, flexible forms of on-demand transport is therefore vital to connect the first and last mile of journeys in the UK.
- Electric scooters will also offer benefits to those who cannot benefit from the Government's investment in active travel and potentially limit the expected increase of private car use.
- Bolt believes that electric scooters should be legalised for use in the UK, and have the same treatment in legislation as EAPCs. The current legislation is out of step with much of Europe.
- Electric scooters should be limited to 15.5mph, have a maximum power output of no more than 350 watts and be required to have front and rear lights with reflective material on the side. To facilitate their use, the Government should amend sections 21, 34, 87 & 143 of the Road Traffic Act 1988[2] to permit the use of vehicles meeting these standards, to allow them to be used on roads and cycle lanes/tracks.
- Bolt discourages the use of electric scooters on pavements and footways, unless they are shared cycle/pedestrian paths. In its submission, Bolt has identified that geo-fencing, with regard to rental schemes, can ensure electric scooters are ridden and parked appropriately. The Government should not mandate the use of helmets, in keeping with EAPC rules, as this will limit their spontaneous use.
- Electric scooters already offer numerous environmental benefits and can accelerate modal shift from ICE vehicles to greener forms of transport. Data from Bolt's operations in Tallinn, Estonia (Figure 1) highlights shows that if Bolt were to manage 2,000 electric scooters in a city, it could eliminate up to 100,000 ride-hailing journeys per year in a city, with a particular emphasis on reducing short journeys (3km or less). Bolt's analysis shows this could cumulatively prevent 85 tons of CO2 emissions in that city per year.
- Bolt's expertise is primarily related to the operation of rental schemes but has provided its view on the full legalisation of electric scooters for personal use in the UK.

3. Appropriateness of electric scooter legislation

Excluding the proposed legislative changes announced by DfT to facilitate trials in the UK[3], the current legislation is no longer appropriate in the UK. Electric scooters are now being taken up at four times the rate of e-bikes and a recent study[4] has shown there are over 20 million users of electric scooters across Europe. In the last two years alone, electric scooters have accumulated over 300 million trips globally in two years, reaching 626 cities across 53 countries. Yet they remain illegal for use in the UK, one of a handful of countries in Europe where this is the case. However, as a Sky News investigation has shown, there were over 1,600 offences recorded relating to their use between 2018 and September 2019[5]. In short, they remain popular, and their illegal use is likely to continue to grow. Bolt firmly believes that an evidence based regulatory framework is the best way of providing safety — by legalising electric scooters and introducing proper standards, requirements and regulation.

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[1] *TfL announces plan to help London travel safely and sustainably*, 2020, Transport for London, viewed 01.06.20 https://tfl.gov.uk/info-for/media/press-releases/2020/may/tfl-announces-plan-to-help-london-travel-safely-and-sustainably

[2] Road Traffic Act 1988, s. 21, 34, 87 & 143. Available at: http://www.legislation.gov.uk/ukpga/1999/28/contents (Accessed: 01 June 2020) Available at: http://www.legislation.gov.uk/ukpga/1988/52/contents

[3] Legalising rental electric scooter trials, *accessed 29.05.20*

[4] EY: Micromobility; moving cities into a sustainable future

[5] Electric scooters: Criminal damage and traffic collisions among hundreds of police incidents

Electric scooters should be classified and regulated in the same manner as electrically-assisted bicycles. Any technical specifications should refer to the standard DIN EN 15194 “Cycles - Electrically power assisted cycles - EPAC Bicycles” and draft standard EN 17128 “Light motorized vehicles for the transportation of persons and goods and related facilities and not subject to type-approval for on-road use”. Furthermore, the European Union is currently in the process of developing FprEN 17128 ‘Light motorized vehicles for the transportation of persons and goods and related facilities and not subject to type-approval for on-road use”, a standard for personal light electric vehicles (PLEV), safety requirements and test methods. These international standards, both published and in draft status set the international benchmark for safety and quality. Bolt believes the UK should follow these standards when investigating its own requirements.

a. **Road Traffic Act 1988**

Bolt believes that if an electric scooter meets the requirements below, they should be permitted for use subject to certain restrictions:

- Powered by an electric motor only
- maximum continuous rated power of the electric motor must not exceed 350 Watts
- the top speed of the vehicle should be 15.5mph
- electrical assistance must cut-off when the vehicle reaches 15.5mph
- has 2 wheels, one front and one rear, aligned along the direction of travel
- has a mass, excluding the rider, not exceeding 35 kilograms
- has means of directional control via the use of handlebars
- has means of controlling the speed via hand controls and its power control defaults to the ‘off’ position
- Dual braking system, and the inclusion of lights front and back.

An electric scooter which complies with the above should not be considered to be a motor vehicle within the meaning of the ‘Road Traffic Regulation Act 1984’ and the ‘Road Traffic Act 1988’ and as a result, they should not be required to be registered, subject to vehicle excise duty (road tax), or be required to hold motor vehicle insurance or require the use of a driving licence. However, we urge the government to legislate that electric scooters must not be ridden by anyone under the age of 18 years. Bolt believes that exempting electric scooters in this way would be proportionate, by treating electric scooters as similar to EAPCs.

From a safety perspective, Bolt believes it is imperative the standards include a handlebar and for users to keep their hands on the handlebar as much as possible whilst riding. This allows users to give a warning signal, use the brakes quickly, and control manoeuvring easily. Under braking, users will naturally lean on the handlebar. Without this, it is difficult to brake quickly and safely, and the user is likely to fall off. However, Bolt disagrees with the suggestion electric scooters should be required to have indicators. None of the markets in Europe in which Bolt works in across Europe have made them mandatory, and Bolt believes the UK should follow suit. Requiring electric scooters to have indicators could lead to a shortage of electric scooters available, as many would need to be retrofitted.

b. **The Highways Act 1835**

At present, electric scooters are also considered "powered transporters" and are prohibited from using public roads, cycle tracks, cycle lanes on roads, or other spaces dedicated to pedal cycle use only (section 21(1), under the Road Traffic Act 1988) and the Highways Act 1835 (Section 72). Bolt believes both should be amended to allow electric scooters meeting the requirements above to be used on public roads, cycle tracks and paths. This includes shared cycle/pedestrian paths — however the local highway authority should have discretion on their use in these areas.

c. **Traffic Signs Regulations and General Directions Act 2016**

To allow use on roads and cycle laness, the Government should amend the Traffic Signs Regulations and General Directions 2016. With regard to the upcoming trials, local areas hosting trials would also have to update Traffic Regulation Orders to allow electric scooter use in cycle lanes and tracks. Bolt believes that should electric scooters be legalised completely, likely after 12 months, these amendments should remain unchanged or included in primary legislation the Government may wish to introduce.

d. **Use on pavements**

Bolt supports the Government's investigation into whether micromobility vehicles used as mobility aids by people with disabilities be permitted to use the footway. However, Bolt is against the permitting of electric scooters being used on the footway. This would cause a hazard for pedestrians, and particularly for those with disabilities. It would also cause greater congestion on the footway, and be difficult to enforce — taking up valuable time and resources of regulatory authorities.

4. The extent to which electric scooters have positive benefits

a. Encouraging modal shift away from internal combustion engine vehicles

Electric scooters are green-at-point-of-use and lightweight, and journeys by this transport mode will replace many that would otherwise be made by internal combustion engine vehicles, for both commuting and pleasure purposes. This will have a number of advantages for the UK including:

i) reducing particle emissions;
ii) easing congestion in cities; and
iii) connecting public transport networks to economic opportunities and homes.

Safe Micromobility, a report by OECD/ITF from 2019[6], suggests that micromobility can spur a mode shift from individual cars, taxis and motorcycles, indicating that potentially "*two thirds of car trips made by London residents can be cycled in under 20 minutes*" (GLA, 2015).[7] Recent data from the European Commission suggests the average trip length of a car journey overlaps with that of electric scooters. Similarly, a study in Chicago shows that where electric scooter hire

[6] *SAFE MICROMOBILITY © OECD/ITF 2020,* https://www.itf-oecd.org/sites/default/files/docs/safe-micromobility_1.pdf, p. 31.

[7] *SAFE MICROMOBILITY © OECD/ITF 2020,* https://www.itf-oecd.org/sites/default/files/docs/safe-micromobility_1.pdf, p. 31.

schemes are not available, 34% of those surveyed would have used a private vehicle.[8] This highlights the potential for electric scooters to cannibalise some of those trips. If true, this may help to reduce carbon emissions from road transport and improve air quality in towns and cities.

b. Bolt's evidence of modal shift in Tallinn, Estonia

In Tallinn, Estonia, Bolt operates both ride-hailing services and electric scooter hire on its platform. Data from Bolt's operations in Tallinn, Estonia (Figure 1) highlights shows that during the electric scooter season in the city, there was a 3% drop in ride-hailing journeys on Bolt's platform among occasional electric scooter users (3+ journeys) and 5.7% drop in ride-hailing journeys among active electric scooter users (10+ journeys). For short journeys (less than 3 km, Figure 2) the drop is more significant - 5.8% for occasional riders and 8.8% for active riders. In this example, if Bolt were to manage 2000 electric scooters in a city, it could save up to 100.000 ride-hailing rides per year in a city, with a particular emphasis on saving short journeys (3km or less).

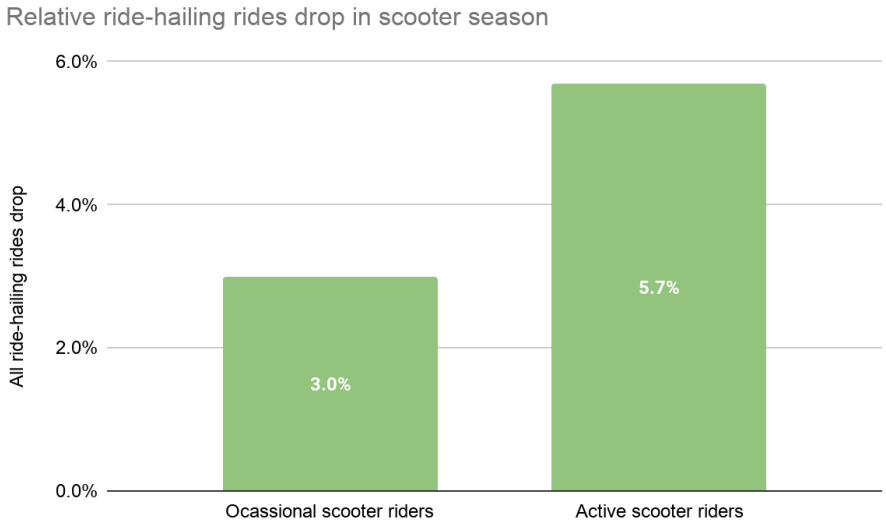
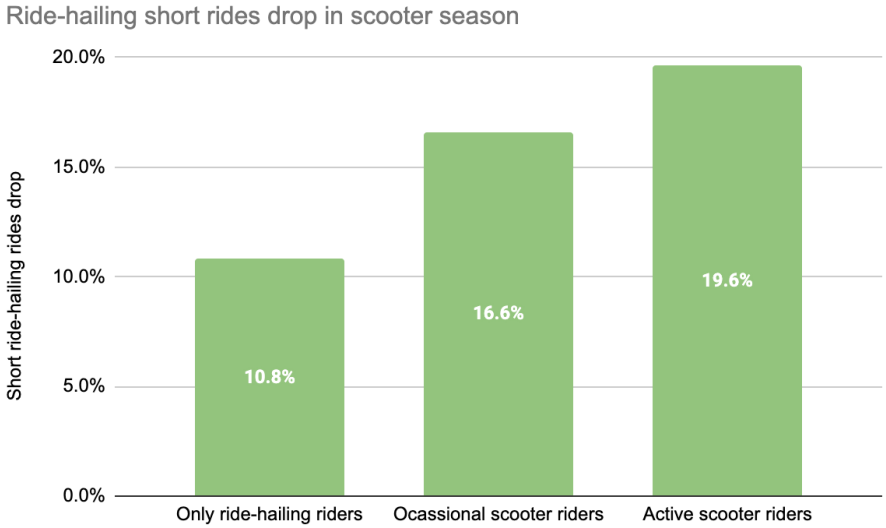


Figure 1. Relative *ride-hailing rides drop in 2019 electric scooter season, Tallinn Estonia*



[8] Smith, C.S.; Schwi… *ess electric scooters in Chicago*, …y; DePaul University, Chaddick … institutes/chaddick-in… …-and-ScooterScenariosMic…

Figure 2. Ride-hailing short rides drop in 2019 electric scooter season, Tallinn, Estonia

Data obtained from electric scooter sharing companies from Vilnius, Lithuania also shows that the distance for electric scooter rides tends to be 4–5 km with an estimated travel time of between 15 and 20 min. These values will differ from city to city due to factors including population density, but clearly show the value of electric scooters in connecting destinations within cities and the potential for driving modal shift away from ICE vehicles in urban areas.[9]

c. Environmental benefits of electric scooter use

The reduction of ride-hailing trips and private vehicle use may not only reduce congestion, but also has significant environmental benefits. For example, using our hypothetical situation above of managing 2,000 electric scooters operating in a city and saving up to 100,000 ride-hailing journeys per year, Bolt's analysis shows this would cumulatively prevent the emission of 85 tons of CO2 per year.

Operating under the same scenario, electric scooters would also reduce at least 2.5kg in exhaust emissions of PM2.5 and PM10 – both known to be carried deep into the lungs, causing inflammation and increasing the risk of heart attack. In addition, non-exhaust[10] PM, which constitutes 60% (by mass) of PM2.5 and 73% of PM10 of road transport emissions[11][12], would also be cut to zero due to electric scooter use.

In order to realise the congestion mitigation and environmental benefits and to further reduce unnecessary car journeys, Bolt will introduce functionality to its platform that when a user requests a ride-hailing trip shorter than 2 miles (more than 25% of our ride-hailing trips), the Bolt mobile app will automatically suggest using an electric scooter instead. Our analysis in Tallinn shows that users are enthusiastic about making this switch without encouragement during the electric scooter season, and therefore Bolt believes it can increase this number by suggesting an electric scooter for shorter trips. Electric scooters are much more efficient for transportation of a single person compared to cars in terms of energy use[13]. That way we can actively

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[9] https://www.mdpi.com/2071-1050/12/1/273/pdf

[10] Brake, tyre and road wear and road dust resuspension.

[11] Research by the British Air Quality Expert Group, 2020, https://www.vtpi.org/tca/tca0510.pdf.

[12] As exhaust emissions are expected to continue to decline in the future, the contribution of non-exhaust PM to overall PM emissions is becoming increasingly important. The average non-exhaust traffic contribution at urban traffic sites is considerably higher in areas where there is extensive use of studded tyres and road sanding during the winter (e.g. 59 % for Stockholm). "The contribution of transport to air quality TERM 2012", www.eea.europa.eu › transport-and-air-quality-term-2012

[13] Fuel consumption of 5 L/100km by an ICE equals energy consumption of about 500Wh/km. electric scooter energy consumption is about 130Wh/km (0.45MJ/km). Source: University of Gavle study, http://hig.diva-portal.org/smash/get/diva2:1347041/FULLTEXT01.pdf, 2019

accelerate the shift to low emission transport modes. Bolt believes this can be replicated in the UK.

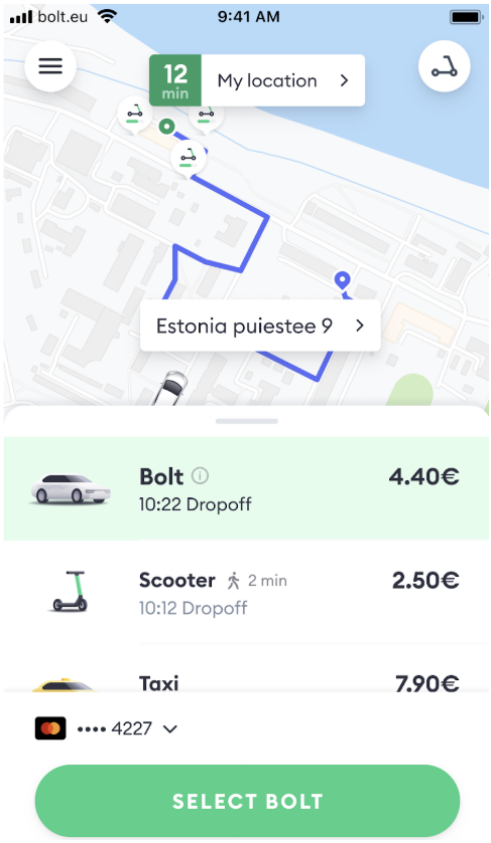

Figure 3 - Example of Bolt's app highlighting the option to use an electric scooter instead of a private hire vehicle or taxi in Tallinn, Estonia.

d. Support for those who cannot use active travel modes

In response to the Covid-19 pandemic and the subsequent reduction in public transport capacity, the Department for Transport announced a £250 million emergency active travel fund[14] in May 2020. The DfT has suggested the money will help encourage more people to choose alternatives to public transport when they need to travel, and commit to strategies which increase the numbers of those cycling and walking in cities and towns.

Bolt would like to highlight to the committee that there are a great many people who will be unable to benefit from further investment in active travel and are not able to cycle or walk to work or for leisure. Therefore, electric scooters may be a solution for people experiencing minor physical mobility challenges, giving them an alternative to car use. Some users indeed reported

[14] https://www.gov.uk/government/news/2-billion-package-to-create-new-era-for-cycling-and-walking

that they would not have walked (8%) or cycled (7%) the last electric scooter trip they made, specifically because of their physical condition. (6t-bureau de recherche, 2019a).[15]

There is no evidence as of yet that the physical activity involved in the operation of an electric scooter provides health benefits. However, when car trips are replaced by electric scooters as demonstrated above, electric scooters have the potential to vastly improve community health by removing not only air pollution, but also noise and road danger sources from the streets.

5. Electric scooters use in the urban environment and their impact on other road users, and pedestrians

As Bolt has highlighted above, there are a great many people unable to use active travel modes because they are disabled, or wish to but do not feel that facilities are adequate for them. A report by Sustrans has suggested that one third of disabled people in UK cities would like to start cycling[16]. However, whilst electric scooters may provide another mode of transport for them — they must not become a hazard to disabled individuals on the footway; or to other road users and pedestrians. Bolt is keenly aware of the need to identify these risks and provide proportionate controls to mitigate them.

a. Use of electric scooters on the road, cycle lanes & tracks

Electric scooter sharing schemes are now widely available in most European countries with the majority of schemes allowing users to ride on both roads and cycle lanes and tracks. Major European cities served by electric scooters include: Madrid, Paris, Barcelona, Berlin, Milan, Rome, and Nice. The speed of electric scooters is broadly similar to that of pedal cycles and their maximum speed would be comparable to electrically-assisted pedal cycles (EAPCs). In addition, electric scooters possess both a handlebar and a physical braking system. As EAPCS are legally able to be ridden on public highways in the UK, and given their similarity — Bolt believes this be applied to electric scooters; provided that electric scooters meet standards outlined by Bolt above in Section 3a. To ensure their responsible use on the road, Bolt would also urge that electric scooters be considered carriages and therefore subject to the same guidance in the highway code. Namely, that users be encouraged to use cycle routes, advanced stop lines, cycle boxes and toucan crossings unless it is unsafe to do so (rule 61)[17]. Bolt believes that users of electric scooters, as cyclists, are not allowed to cycle on a pavement (rule 64).[18] As with EAPCS, Bolt believes the UK Government should mandate that only electric scooters which are limited in speed to 15.5mph should be permitted on roads, and lower speed roads.

Bolt believes electric scooters are now a mature enough vehicle to be used on public roads in the United Kingdom. Their development means they are now the safest micromobility option, because they possess a physical braking system, and a handlebar which allows users to remain balanced whilst riding and under sudden braking.

With regard to electric scooters' safe operation on UK public roads, many electric scooters will be used under the management of hire scheme operators such as Bolt. As a result, the electric scooters will often have better brakes and undergo regular maintenance by experienced

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[15] *SAFE MICROMOBILITY © OECD/ITF 2020, p. 32.*

[16] Sustrans, 2019, *Inclusive cycling in cities and towns*, viewed 01.06.20 https://www.sustrans.org.uk/media/1029/1029.pdf

[17] HM Government, *The Highway Code*, Rules for cyclists https://www.gov.uk/guidance/the-highway-code/rules-for-cyclists-59-to-82

[18] HM Government, *The Highway Code*, Rules for cyclists https://www.gov.uk/guidance/the-highway-code/rules-for-cyclists-59-to-82

Operators. Means they are likely to be tested more often for faults and ensure they are roadworthy at all times.

b. Geofencing technology

Bolt is also a keen proponent of geofencing technology — and regularly works in tandem with city authorities to limit the speed or operation of electric scooters in certain 'geofenced' areas in the city to keep its users safe. As is the norm in many cities, this means electric scooters can have speed limits imposed or even be prevented from entering certain areas if necessary. Geo-fencing dockless electric scooters to provide safer speed zones in certain parts of the cities (geo-fencing reduces the speed of electric scooter automatically when it enters a certain area) can give city authorities comfort that electric scooters are not being ridden in dangerous areas, or on roads with high speed limits inappropriate for electric scooters such as higher than 30mph, or on flyovers for example.

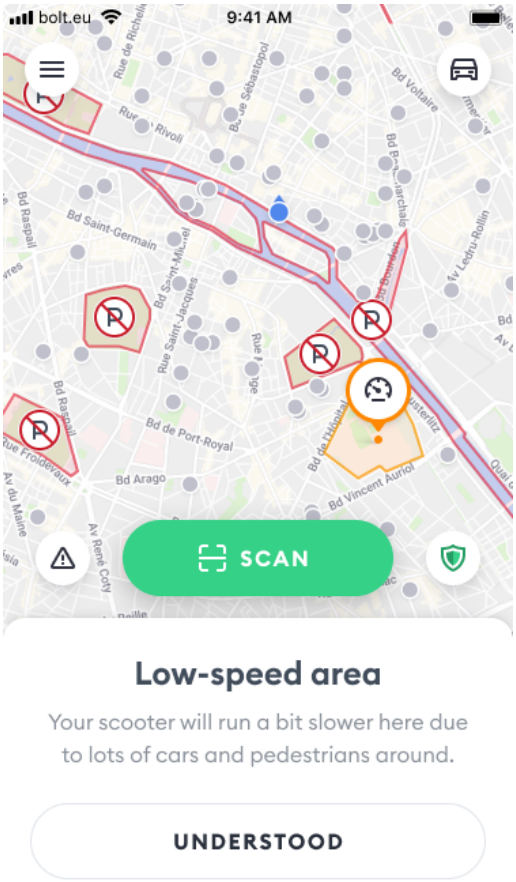

Figure 4. Example of Bolt's geofencing technology in Paris, France

c. Limitations of UK cycle network

Recently, with growing concerns about safety issues, the separation of bicycle lanes from vehicles is now accepted as a measure to reduce incidents involving vehicles and

bicycles/ebikes[19]. From a practical point of view much of the existing cycle infrastructure in the UK does not provide for completely segregated cycle lanes. If electric scooters are only permitted on segregated cycle lanes and tracks, then this may significantly reduce the value of electric scooters as a first and last mile solution. Users would be forced to break up their journey multiple times to ensure they stick to designated segregated cycle routes, such as the example in Figure 4, which show the end of designated cycle lanes. In this example, electric scooter users would not be able to make a left or right turn onto the road, due to the end of a designated cycle lane. In many cases, roads may be the only way of reaching a final destination. For example, Figure 5 shows designated cycle lanes in London. Only permitting electric scooters to use these lanes would leave much of London inaccessible to electric scooters.

Figure 6. The end of a segregated cycle lanes in London. If electric scooters were only permitted on specified cycle lanes, it would leave the user unable to make a left or right turn at this junction and likely to lead to a significantly longer journey (Google Maps, 2020)

[19] Zagorskas, Jurgis & Burinskienė, Marija. (2019). Challenges Caused by Increased Use of E-Powered Personal Mobility Vehicles in European Cities. Sustainability. 12. 273. 10.3390/su12010273. https://www.mdpi.com/2071-1050/12/1/273/pdf

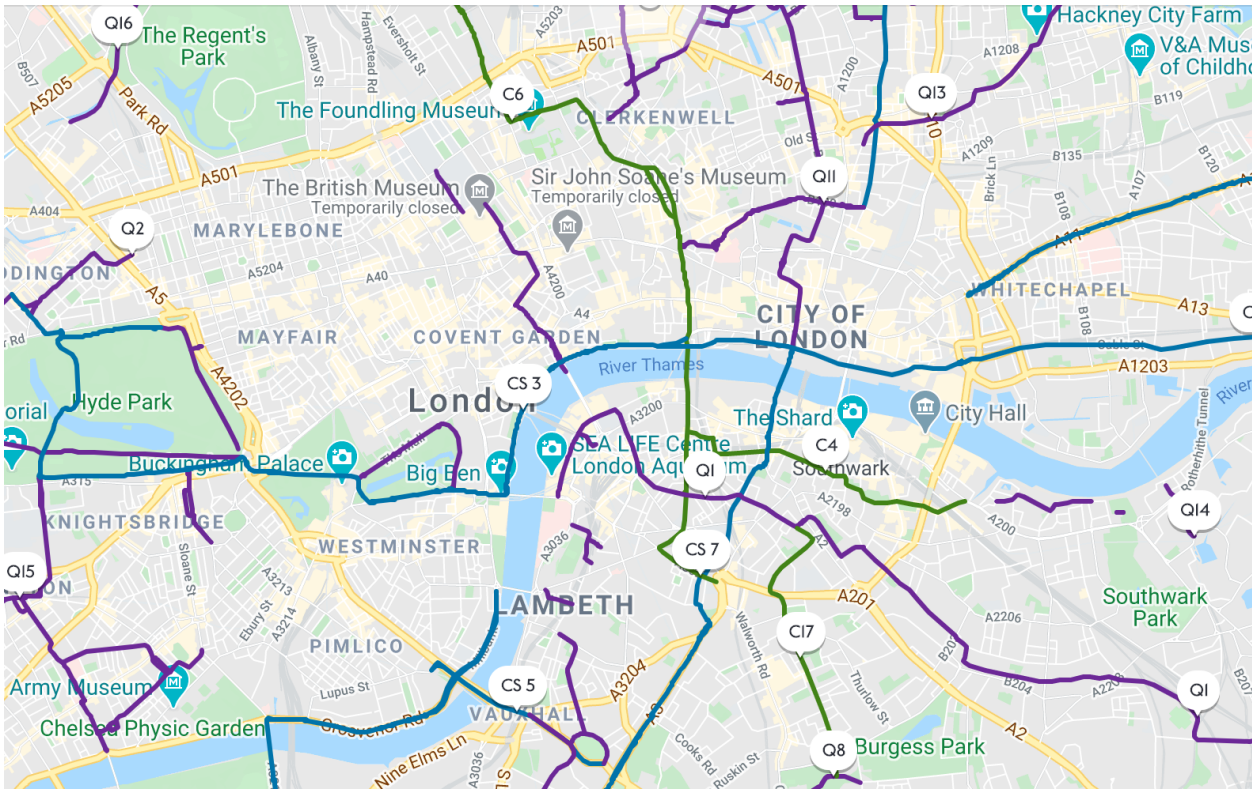

Figure 7. Designated cycle lanes in central London (Google/Transport for London 2020)

d. Impact of electric scooters on other road and cycle lane users

Although limited, there is evidence to suggest that electric scooters may add to congestion on cycle lanes and paths. However, whilst cycle lanes may become more crowded in terms of traffic volume the size of electric scooters compared to cars negates this issue.

Similarly, the introduction of electric scooters to the transport landscape may cause a reduction in active travel modes, such as walking and cycling. However, data from the European Commission suggests that the typical length of a walking trip is less than 1.5km, compared to between the average distance length of an electric scooter trip, which is between 0.5km-5km. This suggests that the introduction of electric scooters will not replace active travel for most walking trips and highlight their use and suitability as a first and last mile solution.[20]

When analysing survey results suggesting that electric scooters may replace walking, important nuances should be taken into consideration. As highlighted in the discussion paper *"Macromanaging micromoblity"* by POLIS[21], a survey conducted in 3 large French cities in the Spring of 2019, showed that 44% of local users would have walked to take their last trip instead of using a free-floating electric scooter, had the latter mode not existed – but only 6% of users walked less overall since they started using electric scooters. This same survey[22] showed that

[20] Zagorskas, Jurgis & Burinskienė, Marija. (2019). Challenges Caused by Increased Use of E-Powered Personal Mobility Vehicles in European Cities. Sustainability. 12. 273. 10.3390/su12010273. https://www.mdpi.com/2071-1050/12/1/273/pdf

[21] https://www.polisnetwork.eu/wp-content/uploads/2019/11/Polis-Paper-Macromanaging-MicroMobility.pdf

[22] https://6-t.co/en/free-floating-electric scooters-france/

electric scooter use is not a direct competitor to biking. Only 9% of local respondents would have used a shared bike and 3% would have ridden their own bike to take their last trip instead of a free-floating electric scooter, had the latter mode not existed.

Similarly, suggestions that public transport may lose travellers to electric scooters need to be examined with a critical eye. 30% of those surveyed in France would have used public transportation, but again only 6% took transit options less often since they started using electric scooters – and, what is more, 23% of these trips are intermodal, meaning they combine the use of the electric scooter with another transportation mode – public transport for 66% of them, and walking for 19%.

As with any mode of transport, there are also safety risks associated with its use to both users and other road users. Any road user is at risk when they use the transport network. However, as the OECD has highlighted, the dangers of micro-mobility devices — such as electric scooters — are similar to cycling. In a recent report, the OECD found four in five deaths on electric scooters involve a car or other vehicle — about the same rate as for bicycles.[23] As Bolt alludes to in its response, the ability for electric scooters to use segregated cycle lanes and cycle tracks where available will be an essential requirement in the United Kingdom.

Many studies do agree there is a scarcity of reliable accident data for electric scooters specifically. Bolt urges that a key outcome of the proposed trials is the collection of robust and reliable accident data, based on trials conducted on the public highway. It is important to note that in order to fully understand electric scooter safety, data is required that allows comparison to other modes, such as the number and severity of injuries per number of miles travelled. This data will help to inform and implement an appropriate regulatory framework the committee seeks to influence.

e. Impact on pedestrians

Finally, a risk of introducing electric scooters relates to spatial considerations. For rental schemes, there may be an increased risk of users using space provided for other vehicle types or through improper parking in cities — many UK cities have experienced a wave of dockless bicycles which caused obstruction on the footway during the last decade. In many cities, this has seen a greater desire to be granted regulatory powers over such schemes. Notably in London, boroughs are currently debating a “dockless mobility” byelaw, to regulate their usage. For this reason, Bolt believes to mitigate this risk, local regulators and city authorities should work with Operators of such schemes to develop designated parking areas as is the case in cities such as Paris and Tel Aviv.

Paris recently introduced a Code of Practice and fees for providers of hireable electric scooters and is designating parking areas where electric scooters can be left. Other cities, such as Copenhagen and Los Angeles, have limited the number of hireable electric scooters that providers may place in the city. Technology can also assist by only allowing an electric scooter to be operable in areas where electric scooters are permitted (refer to section 5b on geo-fencing), or charging users when they are not parked in designated areas. Local authorities or regional mayors could have powers to manage hireable electric scooter services or the use of private electric scooters in their areas.

6. Compulsory requirements or advice on using specified safety equipment

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[23] *SAFE MICROMOBILITY © OECD/ITF 2020,* https://www.itf-oecd.org/sites/default/files/docs/safe-micromobility_1.pdf, p.12

Bolt does not believe that there should be compulsory requirements to use specified safety equipment in the UK. The government considered mandatory use of cycle helmets in detail as part of its cycling and walking safety review in 2018 and decided not to implement this. Bolt believes these considerations are applicable to electric scooters with a similar speed limit to EAPCs.

Bolt does agree with the Department for Transport's that to facilitate trials, it should amend the existing requirement in the Motor Cycles (Protective Helmets) Regulations 1998[24], removing the requirement for a motorcycle helmet to be worn, as it relates to electric scooters. Bolt would suggest that this be considered as part of the full legalisation of electric scooters in the UK. The decision to use an electric scooter is often situational — an individual may make a quick decision to use an electric scooter for their onward journey. The mandatory requirement to use a helmet would reduce the likelihood of these spontaneous uses of electric scooters, as individuals may forget or did not consider bringing a helmet with them.

a. Beginner or 'training modes'

While not mandatory, most responsible rental scheme operators offer a 'training' or 'beginner' mode to users, when they use a scooter for the first time. This provides advice on the local traffic regulations, and provides details about where scooters may or may not be permitted for use. Training and beginner modes often limit speed for the first few journeys, to allow users to familiarise themselves with electric scooters. Bolt was the first electric scooter operator anywhere in the world to offer this functionality, evidencing Bolt's commitment to rider safety.

b. Geofencing in non-permitted use areas

Bolt is also a keen proponent of geofencing technology — and regularly works in tandem with city authorities to limit the speed or operation of scooters in certain 'geofenced' areas in the city to keep its users safe. As is the norm in many cities, electric scooters can have speed limits imposed or even be prevented from entering certain areas if necessary. (geo-fencing reduces the speed of electric scooter automatically when it enters a certain area). This functionality can give city authorities comfort that electric scooters are not being ridden in dangerous areas, or on roads with high speed limits inappropriate for electric scooters such as higher than 30mph or on flyovers.

7. Safety and environmental regulation of electric scooters

a. Approval and registration

As with all other powered vehicles, Bolt agrees it is important that micromobility vehicles' construction is determined to be safe before being used on the road. Bolt urges the Government to require only a self certification (CE mark) from manufacturers rather than a type-approval process for electric scooters. Once in use, users would be required to ensure their vehicle continues to comply with minimum vehicle standards. As Bolt has suggested — because the

[24] Motor Cycles (Protective Helmets) Regulations 1998 (SI 1998/1807). Available at: http://www.legislation.gov.uk/uksi/1998/1807/made (Accessed: 01 June 2020).

size and weight of electric scooters is similar to EAPCs; electric scooters with a maximum speed of 15.5mph should not need a type approval.

Electric scooters should be classified in line with EU regulation N°168/2013 as L1e-A category vehicles and should be regulated in the same manner as electrically-assisted bicycles.

b. Vehicle testing and insurance

For the purpose of the upcoming trials, Bolt agrees with the Government's requirements for rental scheme Operators to hold appropriate third party liability motor vehicle insurance. However, for personal use, Bolt disagrees that specific vehicle insurance should be required. Bolt would suggest the committee consider whether third party insurance would be appropriate, similar to a cycling policy. This would leave electric scooter legislation out of step with that of EAPCs. Similarly, with vehicle testing Bolt believes that self periodic testing, as with EAPCs is the most logical option.

c. Environmental considerations

Bolt is keenly aware that the UK Government is minded to evaluate the environmental benefits of electric scooters. As Bolt has suggested, there are tangible environmental benefits from the modal shift from private vehicles to electric scooters with regard to emissions. However, Bolt also urges the Committee to consider the environmental impact of electric scooter vehicle design and the operation of hire schemes. To maximise the environmental benefits, electric scooters should be durable enough to avoid entire units requiring frequent replacement due to poor design and they should be designed in such a way that components can be replaced to enhance the lifecycle of the vehicle.

Previously, many operators started hireable operations with "one size fits all" electric scooters which were not adaptable to cities' road surfaces, the climate or were not appropriate for regular hire. These machines had short shelf lives, were susceptible to vandalism and required regular whole vehicle replacement. The electric scooter market has now improved the operational lifespan of electric scooters significantly through the introduction of modular vehicle design and the deployment of maintenance software to monitor electric scooters and fix issues quickly. Bolt believes its wholly owned and operated model has an operational lifespan of 3 years. Bolt is acutely aware of the need to avoid the potential downside of consumer waste and environmental impact as a result of poorly designed vehicles. Therefore, Bolt recommends the requirement for electric scooters to be modular, to allow that vehicle components can be replaced when necessary. An ITF report will explore this aspect as it proposes to assess and compare the life cycle carbon footprints of several mobility solutions (ITF, forthcoming a). Increasingly in Europe, shared electric scooters are designed to be modular, not just for their batteries but for every other principal component group (wheels, electronics, body, etc.). Given this consideration, Bolt would urge the committee to consider how a type approval regulation (if applied) would cope with or discourage such modular solutions.

Finally, the Committee should also consider the entire "life cycle" of hireable electric scooters - including the manufacturing, the shipping, the deployment, the use, the collection and the maintenance during operation.

For braking systems to be reliable, Bolt believes that electric scooter design should protect brake cables from vandalism. The use of fully-enclosed and tamper-proof brake cables is recommended by NACTO (2018).[25] Minimum performance requirements should be specified

and tested during vehicle approval. These could be expressed in terms of outcome (e.g. average deceleration), under specific speed, load and gradient conditions.

8. European countries' experience of electric scooters on the road

In a short space of time, the european electric scooter market has grown, and left many regulators attempting to keep pace with their use. The majority of european nations do now allow the use of electric scooters on the road; with the exception of Ireland, which has a similar regulatory regime to the United Kingdom. However, whilst use on the road is permitted, many European countries are now bringing in stronger regulation to protect users. In some cases, for example in Estonia, the default is to allow electric scooters to be used on pavements and cycle lanes, and the road only in exceptional circumstances.

The majority of these nations also delegate greater powers to local authorities, to tailor specific rules to the needs of their jurisdictions. Bolt operates rental schemes in over 12 cities, and has provided an overview of some of the largest EU markets below,

a. France

In December 2019, France introduced its long awaited law, *'Loi d'orientation des mobilités*[26]*'* (LOM) which enabled cities to regulate electric scooters at a national level. In France, this now means that riding on the pavement will be prohibited unless in designated areas, and then at walking speed only. It also specifies that only one rider will be allowed per device, and no mobile phone use will be allowed. Further, users cannot go against the traffic flow and must use cycle lanes where available.

Until 2020, the scooters (called "trottinettes" in French) were allowed to be parked on pavements or in pedestrianised zones if their position was not in the way of pedestrians - for example, between two trees. However, now their parking (or discardment) on any part of a pavement or pedestrianised area is "prohibited and considered intrusive". They must now use normal vehicle parking spaces, in the same way as motorbikes and cars. The Committee should investigate this as a requirement for rental schemes, due to take place from June 2020.

By next July, the scooters' top speed will be capped at 25km/h in France. Users riding on permitted faster roads must also wear a helmet and high-visibility clothing. E-scooters will be banned completely on country roads. Any infringement will be punished by a fine of €135 (£116), and up to €1,500 for going over the speed limit.

b. Germany

In 2019, Germany legalised electric scooters for use on the roads after a large increase in their use[27]. The new rules enabled battery-powered scooters to circulate on roads and cycle lanes but forbade them from being used on the pavements. Users are required to be 14 or over and scooters must not be able to travel at more than 12mph.

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[25] "NACTO Policy 2018: Guidelines for the Regulation and Management of Shared Active Transportation", National Association of City Transportation Officials, https://nacto.org/wp-content/ uploads/2018/07/NACTO-Shared-Active-Transportation-Guidelines.pdf (accessed on 04 February 2020).

[26] Parlement français https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000039272656&categorieLien=id

[27] Deutscher Bundesrat https://www.bundesrat.de/SharedDocs/drucksachen/2019/0101-0200/158-19(B).pdf?__blob=publicationFile&v=1

In the three months following legalisation in June 2019, Berlin Police reported that electric scooters had caused 74 accidents and numerous traffic offences. Police reported 233 traffic violations and 65 cases of drink-driving since the transport devices had been allowed in the Capital.

In response to calls to strengthen regulation by a number of German cities, German politicians voted for amendments to the country's Road Traffic Act on Friday, which handed individual cities the power to heavily restrict the areas in which e-scooters can be parked or ban them from the streets entirely. Many cities cited widespread vandalism, erratic driving and multiple accidents in cities as cause for tougher regulation.

c. Estonia

In Estonia, the national parliament is introducing new electric scooter legislation in July 2020. The upcoming national regulation, through the 'Liiklusseadus' or Traffic Act will introduce a new vehicle category "kergliikur" to cover scooters.[28]

This new category of vehicle will be allowed to drive primarily on pavements and on bicycle lanes; and in exceptional cases on roads (sõidutee). Their maximum speed will be limited to 25 km/h, however when used in close proximity to pedestrians, users must choose a slower speed. Should an electric vehicle kergliikur be used on a road (sõidutee), users aged between 10-15 year old will need to show a bicycle license; a user below the age of 16 must also have a helmet. The scooters will be limited to 1000 Watts maximum power output and are also required to have lights and reflectors.

d. Lithuania

Pursuant to the Law on Road Safety of Lithuania, a vehicle with at least two wheels and an internal combustion engine or electric motor with a maximum net power not exceeding 1 kW and a maximum design speed not exceeding 25 km/h, is classified as a motorbike.

Electric scooters are thus classified as motor bikes and can be ridden on bicycle paths, shared pedestrian and bicycle paths, or, where they do not exist - on a suitable curb. When driving on a shared pedestrian and bicycle path or a sidewalk, the driver of an electric scooter must give priority to pedestrians and must not create risk to them. It is notable that riders of electric scooters are not allowed to cross the streets at pedestrian crossings while riding - they have to get off the scooter.

To encourage responsible use of electric scooters, Vilnius Municipality has issued recommendations for scooter users in the form of 10 commandments - "City Bible for Scooters"[29] .

June 2020

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[28] The Government of the Republic of Estonia .https://m.riigikogu.ee/tegevus/eelnoud/eelnou/f8b51ade-0fbb-41f7-9a64-65089aa56a6e/Liiklusseaduse%20muutmise%20seadus

[29] Vilnius Municipality https://vilnius.lt/lt/paspirtukai/.