

**For discussion
on 19 June 2020**

**Legislative Council Panel on Transport
Review of the Use of Electric Mobility Devices in Hong Kong**

PURPOSE

The Government proposes that a regulatory framework be introduced for electric mobility devices (“EMDs”). This paper sets out, and seeks members’ views on the proposed framework.

BACKGROUND

2. EMDs can be broadly categorised into three main types: (i) Motorised Personal Mobility Devices (“PMDs”)¹; (ii) Power Assisted Pedal Cycles (“PAPCs”, also known as Pedelecs); and (iii) Motorised Personal Mobility Aids (“PMAs”)². **Annex A** sets out the major types of EMDs (with photos) under the above categories.

3. According to the Road Traffic Ordinance (Cap. 374) (“the Ordinance”), “motor vehicle” means any mechanically propelled vehicle, and all “motor vehicles” must be licensed for use. While there is no statutory definition of EMDs in the Ordinance, EMDs are mechanically propelled and thus caught by the definition of “motor vehicle”. However, the designs and configurations of EMDs, in general, fail to meet the statutory safety requirements of motor vehicles³. As a result, the Transport Department (“TD”) does not register or license EMDs under the Ordinance, and the use of EMDs on roads constitutes violation of the law. The above notwithstanding, motorised PMAs

¹ Common examples are electric scooters, segways and electric unicycles.

² Common examples are electric wheelchairs.

³ For example, EMDs’ braking and lighting systems do not meet the statutory requirements of motor vehicles.

manufactured for medical purpose(s) have been regarded as medical devices instead of motor vehicles.

4. The use of EMDs has become more prevalent in Hong Kong in recent years. Their increasing use has created potential road safety hazard to road users. In particular, the recent fatal accidents⁴ involving electric scooter and PAPCs have heightened public concern over the safety of using EMDs. TD has also received complaints about speeding of motorised PMAs on footpaths as well as abuses by non-disabled persons using motorised PMAs. In short, there have been increasing calls from the community for proper regulation of the use of EMDs in Hong Kong.

5. It is the Government's intention to bring the law up-to-date with a view to providing a proper regulatory framework for EMDs on the one hand, and embracing new technologies and innovations for personal mobility on the other hand. Against this background, TD commissioned the Consultancy Study on Enhancing Walkability in Hong Kong in December 2017 to review, among other walkability issues, the regulatory policies of EMDs in various jurisdictions/cities and their use in Hong Kong.

OVERSEAS PRACTICES AND REGULATORY REQUIREMENTS

6. TD has reviewed the practices of 12 jurisdictions/cities on their regulation of EMDs⁵. A summary of their practices and regulatory requirements is at **Annex B** and the key findings are set out in paragraphs 7 to 11.

Permitted use of EMDs on footpaths, carriageways and cycle tracks

7. The vast majority of the jurisdictions/cities studied do not allow the use of motorised PMDs and PAPCs on **footpaths** due to pedestrian safety concern,

⁴ There were four fatal accidents involving electric scooter and PAPCs from October 2019 to March 2020.

⁵ The jurisdictions/cities under the review include (1) Shanghai of the Mainland, (2) Singapore, (3) Tokyo of Japan, (4) Seoul of South Korea, (5) Queensland and (6) Victoria of Australia, (7) the United Kingdom, (8) Germany, (9) France, (10) Barcelona of Spain, as well as (11) Washington DC and (12) New York State of the United States.

while motorised PMAs used by the disabled and elderly are generally allowed on footpaths with restriction on speed limit.

8. Less than half of these jurisdictions/cities allow the use of motorised PMDs on **carriageways** subject to speed control requirements. All of them allow the use of PAPCs on carriageways (on dedicated bike lanes where available), with three cities imposing respective speed limit control. Motorised PMAs are not allowed for use on carriageways in most jurisdictions/cities.

9. The majority of these jurisdictions/cities allow the use of motorised PMDs and PAPCs on **cycle tracks**. However, most of these jurisdictions/cities ban the use of motorised PMAs on cycle tracks except Shanghai, Singapore, and Queensland and Victoria of Australia where the use of motorised PMAs on cycle tracks is subject to a speed limit.

Regulatory Control and Requirements for EMDs

10. Across the jurisdictions/cities, Queensland of Australia seems to be the most liberal in allowing the use of both motorised PMDs and PAPCs. Shanghai, Singapore, Tokyo, Seoul, Victoria of Australia and the United Kingdom do not allow or allow only very limited use of motorised PMDs.

11. The key features of regulatory control and requirements of these jurisdictions/cities on the use of EMDs are generalised as follows –

- (a) technical specifications and speed limit control are imposed on motorised PMDs and PAPCs in most jurisdictions/cities;
- (b) age restrictions are imposed on motorised PMD users in most jurisdictions/cities;
- (c) motorised PMD and PAPC users are mandatorily required to wear safety gears such as helmets in most jurisdictions/cities;
- (d) insurance covers are not required for motorised EMD users except motorised PMDs in Barcelona, Germany and France and and motorised PMAs in Queensland of Australia; and

- (e) registration/licensing of motorised PMDs and PAPCs are required in some jurisdictions/cities while motorised PMAs users are mostly not required to register their devices.

THE PROPOSED REGULATORY FRAMEWORK FOR EMDs

12. While making reference to the practices and regulatory requirements for EMDs in other jurisdictions/cities, we are mindful that Hong Kong is a densely populated city and our road networks are heavily used by motor vehicles. We need to take into account a host of local factors in reviewing the proposed regulation of EMDs in Hong Kong, including road and pedestrian safety concerns, traffic environment, road design and associated traffic impacts, as well as the benefits that EMDs may bring to their users. In connection with the last factor, due consideration has been given to the practical needs of the users of motorised PMAs.

Proposed Regulatory Framework for the Use of Motorised PMDs and PAPCs on Cycle Tracks

13. The Government attaches importance to road safety and we consider it both necessary and reasonable to design the regulation of motorised PMDs and PAPCs that is proportionate to the risk levels that they may pose on their users and other road users. We propose that regulation of motorised PMDs and PAPCs should be less stringent than that for motor vehicles while more stringent than that for bicycles in the light of their following features –

- (a) in general, motorised PMDs and PAPCs are lighter and slower than motor vehicles. Hence, the associated risks posed to other road users are generally lower compared with motor vehicles; and
- (b) while the average speed of motorised PMDs and PAPCs is generally comparable with bicycles, their maximum speed, if without proper control, can far exceed that of bicycles and they therefore would impose higher safety risks.

14. Specifically, we consider that, same as bicycles, motorised PMDs and PAPCs should not be used on footpaths for pedestrian safety. On the other hand, cycle tracks that are specifically designed for cycling may be more

suitable for use of motorised PMDs and PAPCs. In particular, the cycle track networks in the New Towns and New Development Areas are designed with safety facilities at sharp bends, steep ramps and pedestrian crossings. We consider that, if properly regulated, **motorised PMDs and PAPCs could be used for short-distance commuting where the cycle track networks are more comprehensive.** With suitable regulatory and safety requirements, their impact on bicycle traffic is expected to be relatively low.

15. As regards whether motorised PMDs and PAPCs may be allowed on carriageways, we have also given careful thought to the circumstances of the local roads. Considering that the existing road infrastructures are mainly designed for motor vehicles without any designated bike lane and the fact that vehicular and pedestrian traffic as well as kerbside activities are extremely heavy in Hong Kong even outside the central business districts, we propose that **motorised PMDs and PAPCs should not be allowed on carriageways.**

Proposed Regulatory Framework for the Use of Motorised PMAs on Footpaths

16. Motorised PMAs are the motorised version of wheelchairs for essential mobility of the disabled and the elderly. Their use on footpaths is considered necessary for these people and the impact on pedestrians is expected to be low, provided that their speed is restricted at a certain level. On this basis, we consider that **motorised PMAs should be allowed for use on footpaths while they should be banned for use on cycle tracks or carriageways.**

WAY FORWARD

17. TD will further develop the regulatory and technical requirements for EMDs such as speed control, safety gears, age restrictions on users, technical specifications, etc. Given the intention is to introduce penalties for the breaching of statutory requirements, TD will also study the feasibility and enforceability of the regulatory framework.

Site Trials

18. In order to gain the operating experience of regulating the use of motorised PMDs and PAPCs on cycle tracks and the effectiveness of certain safety requirements, TD plans to conduct site trials in Science Park and

Tseung Kwan O (“TKO”) in the second half of 2020. The site in the Science Park is a popular spot for cycling, while TKO is a new town with developed cycle tracks in a densely populated area. The site trials will focus on (i) the public acceptance on the use of motorised PMDs and PAPCs on cycle tracks; (ii) the interaction between motorised PMDs, PAPCs and bicycles; and (iii) the effectiveness of certain safety requirements to be imposed on users of motorised PMDs and PAPCs.

Consultation with stakeholders

19. TD will consult stakeholders including the Transport Advisory Committee, relevant District Councils, user groups such as cyclists and EMD users, etc. in the second half of 2020 on the proposed regulatory framework for EMDs and the site trials.

Legislative Amendment Exercise









20. The introduction of a regulatory framework for EMDs will necessitate amendments to the existing legislation. Subject to the evaluation findings from the site trials, and consultation results with stakeholders and internal deliberations on the technical, safety and licensing requirements for EMDs, TD plans to commence the legislative amendment exercise in 2021.

ADVICE SOUGHT

21. Members are invited to note the proposed regulatory framework for the use of EMDs and the proposed site trials in two pilot areas.

**Transport and Housing Bureau
Transport Department
June 2020**

Major Types and Examples of Electric Mobility Devices (“EMDs”)

EMD	Type	Example
(a) Motorised PMDs ¹	Electric Scooter (lower speed)	
	Electric Scooter (higher speed)	
	Self-balancing Scooter (Segway type)	
	Self-balancing Scooter (Hoverboard type)	
	Electric Unicycle	
	Electric Skates	
	Motorised skateboard	
(b) Power Assisted Pedal Cycle ²	--	

¹ Wheeled devices propelled by an attached electric motor for transporting people only, excluding power assisted pedal cycles and personal mobility aids.

² Bicycles (or tricycles) that are equipped with an auxiliary electric motor and operate in pedal-assist only mode in order to ease pedalling efforts. The motorised assistance would only be provided when the riders are pedalling, and would be cut out once a certain speed (generally at 25 km/h) is reached.


EMD	Type	Example
(c) Motorised Personal Mobility Aid ³	Electric wheelchairs Mobility scooters	

Image Source:

Electric scooter (with seat, Razor E300S)

<https://www.razor.com/products/electric-scooters/e300s-electric-scooter-seated/>

Electric scooter (without seat, eWheels Speedway Mini 4 Pro)

<https://www.ewheels.com/product/new-speedway-mini-4/>

Self-balancing scooter (Segway MiniLite)

<http://www.segway.com/products/consumer-lifestyle/segway-minilite>

Self-balancing scooter (Electric hoverboard, Gyrocopter PRO 2.0)

<https://www.bestbuy.ca/en-ca/product/gyrocopters-pro-2-0-hoverboard-with->

Electric unicycle (Segway One S1)

https://www.amazon.com/Segway-Balancing-Personal-Transporter-Control/dp/B01M1SFFNE/ref=br_lf_m_8zbercosysdp9sm_ttl?_encoding=UTF8&s=sporting-goods

Electric skates (Hammacher)

<https://www.hammacher.com/Product/12158>

Motorised skateboard (evolve GT Carbon Series 2in1 Electric Skateboard)

<https://www.evolvekateboards.com/pages/comparison-1>

Power assisted pedal cycle (Halford, Carrera Crosscity Electric Bike)

<http://www.halfords.com/cycling/bikes/electric-bikes/carrera-crosscity-electric-bike/bluetooth-speaker-app-top-and-front-led-lights-ul2272-certified-blue/10693494.aspx?>

Electric wheelchair (Ottobock B400)

<https://www.ottobock.com.hk/en/mobility-solutions/complex/power-wheelchairs/b400/>

Mobility scooter (Go-Go Ultra X3-Wheel Travel Mobility Scooter)

<https://www.pridemobility.com>

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³ Electric propelled devices (generally three- or four-wheeled) that are designed to carry individuals who have difficulty in walking, for example, electric wheelchairs and mobility scooters.

Summary of Practices and Regulatory Requirements in Various Jurisdictions / Cities

The Transport Department has conducted a study on the practices and regulation of electric mobility devices in 12 jurisdictions/cities, which include (1) Shanghai of the Mainland, (2) Singapore, (3) Tokyo of Japan, (4) Seoul of South Korea, (5) Queensland and (6) Victoria of Australia, (7) the United Kingdom, (8) Germany, (9) France, (10) Barcelona of Spain, as well as (11) Washington DC and (12) New York State of the United States. The key findings are summarised as follows:

1. Motorised Personal Mobility Devices (“PMDs”)

Permitted use of motorised PMDs on footpaths

- The **vast majority** of these jurisdictions/cities **do not allow** the use of motorised PMDs on footpaths except Queensland and Washington DC (outside Central Business District area) where a speed limit of 25km/h¹ and 16km/h are respectively imposed.

Permitted use of motorised PMDs on carriageways

- **Less than half** of these jurisdictions/cities **allow the use of motorised PMDs on carriageways subject to speed control requirements**, including Queensland (with a speed limit of 25km/h on local road²), Germany (with a speed limit of 20km/h on cycle lanes of roads only), France (with a speed limit of 25km/h), Barcelona (with a speed limit of 20km/h or 30km/h depending on the type of motorised PMDs), and New York State (with a speed limit of 24km/h³).

Permitted use of motorised PMDs on cycle tracks

- The **majority** of these jurisdictions/cities **allow** the use of motorised PMDs

¹ Speed limit (in km/h) refers to the maximum speed that the devices are allowed to be operated on the road type concerned.

² According to the Transport Operations (Road Use Management—Road Rules) Regulation 2009, there is no dividing line or median strip on the local roads. In case it is a one-way road, it should not have more than one lane.

³ PMDs may only be operated on roads (including non-interstate public highways, private roads open to motor vehicle traffic, and designated bicycle or in-line skate lanes) with a speed limit of 30mph (i.e. 48km/h) or less.

on **cycle tracks** subject to speed control requirements including Singapore, Seoul, Queensland and France (with a speed limit of 25km/h), Germany (with a speed limit of 20km/h), Barcelona (with a speed limit of 10km/h or 30km/h depending on the road types), New York State (with a speed limit of 24km/h) and Washington DC (with a speed limit of 16km/h).

Mandatory insurance requirement

- The **vast majority** of these jurisdictions/cities **do not require** third-party insurance coverage for the use of motorised PMDs, except Barcelona if motorised PMDs are used for economic activities⁴, Germany and France.

Registration requirement

- The **majority** of these jurisdictions/cities **do not impose** device registration requirement except Singapore (for e-scooters only), Barcelona (if motorised PMDs are used for economic activities), Germany and Washington DC.

Requirement for personal protective gear

- The **majority** of these jurisdictions/cities **do not mandate** wearing personal protective gear (for example, helmet) when using motorised PMDs, except New York State (for users of less than 18 years old), Seoul, Queensland and Barcelona.

Age restriction

- The **vast majority** of these jurisdictions/cities **impose** age restriction requirement on motorised PMD users, including Singapore, Barcelona, New York State and Washington DC (with user age not less than 16), Queensland (with user age not less than 16; or 12 under adult supervision), Germany (with user age not less than 14), Seoul (with user age not less than 13), and France (with user age not less than 12).

Technical requirement

- **All** of these jurisdictions/cities with permitted use of motorised PMDs, except Washington DC, **have specified** technical requirements on motorised PMDs such as maximum speed, power, weight, lighting, etc.

⁴ Economic activities refer to profit-making commercial, tourist or leisure activities.

2. Power Assisted Pedal Cycles (“PAPCs”)

Permitted use of PAPCs on footpaths

- The **vast majority** of these jurisdictions/cities **do not allow** the use of PAPCs on footpaths except Queensland and Victoria (for age less than 13), France (for users with age less than 8), and Barcelona (under the permitted scenarios⁵).

Permitted use of PAPCs on carriageways

- **All** these jurisdictions/cities **allow** the use of PAPCs on carriageways (on dedicated bike lanes where available⁶). In addition, a speed control restriction of 15km/h is imposed in Shanghai, a speed limit of 20km/h or 30km/h is imposed in Barcelona (depending on the road type), and a speed limit of 32km/h or 40km/h is imposed in New York State (depending on the type of PAPCs).

Permitted use of PAPCs on cycle tracks

- PAPCs are **allowed** to be used on cycle tracks in **all** these jurisdictions/cities, except Washington DC. Some of these jurisdictions/cities impose speed limits, including Shanghai (with a speed limit of 15km/h), Singapore (with a speed limit of 25km/h), Barcelona (with a speed limit when riding on speed-specified zone (e.g. 30km/h zone)) and New York State (with a speed limit of 32km/h or 40km/h depending on the PAPC classes).

Mandatory insurance requirement

- **None** of these jurisdictions/cities mandates insurance coverage for the use of PAPCs.

Registration requirement

- The **vast majority** of these jurisdictions/cities **do not impose** registration requirement except Barcelona (for PAPCs that are used for economic activities), Shanghai and Singapore.

⁵ Permitted scenarios: (i) 5 metres or wider and with 3 metres of clearance, (ii) between 10 p.m. and 7 a.m. and the area between the pavement and the road or the walkway is more than 4.75-metres wide and there is clearance of 3 metres, or (iii) children under 12 with adult’s company.

⁶ For carriageways without bike lane, PAPCs shall travel along side of the carriageways.

Requirement for personal protective gear

- The **majority** of these jurisdictions/cities **mandate** wearing of personal protective gear (for example, helmet) for the use of PAPCs, including Singapore (for riding PAPCs on carriageways), Tokyo (for users with age less than 13), France (for users with age less than 12), New York State (for riding specific types of PAPCs), Seoul, Queensland and Victoria.

Age restriction

- Shanghai, Singapore, New York State and Washington DC do not allow the use of PAPCs for age less than 16. The United Kingdom and Seoul do not allow the use of PAPCs for age less than 14 and 13 respectively.

Technical requirement

- **All** these jurisdictions/cities **have specified** technical requirements on PAPCs such as maximum speed, power, weight, lighting, etc.

3. Motorised Personal Mobility Aids (“PMAs”)

Permitted use of motorised PMAs on footpaths

- **All** these jurisdictions/cities **allow** the use of motorised PMAs on footpaths. Some impose speed control requirement, including Tokyo, Germany and France (both with a speed limit of 6km/h), the United Kingdom (with a speed limit of 6.4km/h), Singapore, Queensland and Victoria (with a speed limit of 10km/h), Washington DC (subject to a speed limit of 12.8km/h) and Shanghai (with a speed limit of 15km/h).

Permitted use of motorised PMAs on carriageways

- The **vast majority** of these jurisdictions/cities **do not allow** the use of motorised PMAs on carriageways except Shanghai (subject to a speed limit of 15km/h) and the United Kingdom (subject to a speed limit up to 13km/h depending on the type of motorised PMAs).

Permitted use of motorised PMAs on cycle tracks

- The **vast majority** of these jurisdictions/cities **do not allow** the use of motorised PMAs on cycle tracks except Shanghai (subject to a speed limit of 15km/h), and Singapore, Queensland and Victoria (subject to a speed limit of 10km/h).

Mandatory insurance requirement

- **All** these jurisdictions/cities, except Queensland, **do not mandate** insurance coverage for the use of motorised PMAs.

Registration requirement

- Only Shanghai, Queensland and the United Kingdom (depending on the type of motorised PMAs) require registration of motorised PMAs.

Requirement for personal protective gear

- **None** of these jurisdictions/cities mandates wearing of personal protective gear (for example, helmet) for the use of motorised PMAs.

Age restriction

- **None** of these jurisdictions/cities imposes age restriction for the use of motorised PMAs.

Technical requirement

- Shanghai, Tokyo, Queensland and Victoria, the United Kingdom and Germany specify technical requirements on motorised PMAs such as maximum speed, power, weight and lighting.

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