Legislative Council Panel on Environmental Affairs
Receiving public views on promoting the use of electric vehicles

Consolidated Response and Supplementary Information

Regarding the written submissions [1] from deputations and individuals to the Panel on Environmental Affairs and the views expressed at the meeting on 22 January 2020, after consulting relevant government departments (including the Transport and Housing Bureau (THB), the Education Bureau, the Transport Department (TD), the Planning Department (PlanD), the Government Logistics Department (GLD), the Electrical and Mechanical Services Department (EMSD), the Lands Department (LandsD), the Leisure and Cultural Services Department (LCSD) and the Innovation and Technology Commission (ITC)), the Hong Kong Housing Authority (HA), the Hong Kong Housing Society (HKHS), the Link Asset Management Limited (Link) and the Mass Transit Railway Corporation Limited (MTR), the Government provides the consolidated responses to the views at **Annex 1**.

2. Besides, as requested at the meeting, the details of the total numbers of parking spaces in the car parks owned/managed by the HA and the HKHS respectively, and the percentages of parking spaces installed with electric vehicle (EV) charging facilities are provided at **Annex 2**.

Environment Bureau/Environmental Protection Department
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[1] Legislative Council Paper Nos. CB(1)336/19-20(06) to CB(1)336/19-20(31), CB(1)346/19-20(01) to CB(1)346/19-20(03), CB(1)352/19-20(01) to CB(1)352/19-20(03) and CB(1)366/19-20(01).

Annex 1

Receiving public views on promoting the use of EVs
Government's consolidated responses to the views expressed by deputations and individuals at the meeting and/or in written submissions

Summary of views	Government's responses
1. Policies and objectives for promoting low carbon transport lifestyle and promoting EVs	
1.1. A timetable for phasing out/ceasing the sale of fuel driven vehicles, a phased target for the percentage of EVs, and a vision for zero exhaust emission should be set to promote overall planning for EVs. 1.2. Hong Kong should be transformed into a walkable city and low carbon transport lifestyle should be promoted. 1.3. The use of hybrid vehicles and biodiesel vehicles should be promoted. 1.4. Vehicle growth should be controlled and the concept of walking and cycling should be integrated into urban development to encourage the public to adopt green commuting.	Our second largest source of greenhouse gas (GHG) emissions is transport, which made up about 18% of the total emissions in Hong Kong. In order to promote deep decarbonisation, relevant measures have been implemented in this area to improve public transport services, so that public transport remains the preferred choice of commuters and Hong Kong's transport sector has a low level of transport-related emissions per capita. Partnership with public transport operators to trial new technologies and reduce energy is our priority. In terms of urban planning, promoting the use of EVs is generally in line with the strategic directions identified/proposed under the "Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030", including creating, enhancing and regenerating environmental capacity by reducing carbon footprint and proactively identifying opportunities to improve our environment, as well as the concepts under the Smart, Green and Resilient City strategy, which together, focus on minimising demand for use of resources, promoting low-carbon smart economy

Summary of views	Government's responses
1.5. Set up green zones where access of vehicles other than EVs is prohibited.	and living, reducing carbon emissions, enhancing city efficiency, improving the quality of urban living and enhancing climatic resilience. As for promoting the use of EVs, the Government is actively preparing to update the *Clean Air Plan* and formulate a roadmap on the popularisation of EVs to, among other things, further examine the measures to improve air quality, as well as the policy objectives and plans to promote the use of EVs, including the study on formulating the direction and roadmap to ban the sale of fuel-driven vehicles. The Environment Bureau and the Environmental Protection Department (EPD) will take into account the views of relevant government departments and stakeholders in drawing up the details. The work is initially scheduled for completion in the first half of 2021. As for promoting the use of hybrid-electric (hybrid) vehicles, compared to conventional vehicles, hybrid vehicles in general can offer better fuel efficiency, but they still have tailpipe emissions and their fuel saving depends on the driving modes. In comparison, EVs have no tailpipe emissions. In the case of private cars (PCs), taking into account the Government's standing policy to promote the use of public transport, the Government considers that it is appropriate to grant First Registration Tax (FRT) concession for electric PCs (e-PCs) only. The Government currently has no plan to provide FRT concession for hybrid PCs.

Summary of views	Government's responses
	In addition, we are committed to a duty-free policy to promote the use of biodiesel as vehicle fuel. To ensure the quality of the fuel and strengthen users' confidence, we have amended the Air Pollution Control (Motor Vehicle Fuel) Regulation (Cap. 311L), and with reference to the standard adopted by the European Union, formulated the specifications of motor vehicle biodiesel for Hong Kong. The amended regulation came into force on 1 July 2010. As for encouraging citizens to walk, the Government's policy is to build unique connecting infrastructure suitable for the city's vertical topography to enable more people to walk for short and medium distances. The concept of walkability has thus been embraced in the planning and design of the built environment and pedestrian networks. This concept will be adopted in projects at different planning levels. The Government is also committed to promoting 'Walk in HK' and fostering a 'bicycle-friendly environment' in new towns and new development areas to further reduce transport-related carbon emissions with a view to combatting climate change. Cycling and walking are ideal low-carbon modes of transport for short-distance commuting, which can serve as the 'first mile' and 'last mile' connection, thus minimising the need for mechanised transport.

Summary of views	Government's responses
	The Government has been closely monitoring the growth rate and size of PC fleet. Financial measures including adjustment to the FRT and annual licence fee for vehicles were adopted before to contain car growth. Notwithstanding that the year-on-year growth rate of licensed PCs has moderated to less than 2.0% in recent months, the Government will continue to monitor the situation closely and consider appropriate measures in due course, taking into account such factors as traffic congestion conditions, trend of car growth, availability of public transport services and affordability of motorists.
2. Promoting the use of EVs	
FRT concessions and other financial incentives	
2.1. The FRT concessions for EVs should be raised and extended, and other additional financial incentives should be provided, so as to encourage purchasers of PCs to choose e-PCs. 2.2. Tax incentives are still an effective tool for promoting the use of EVs. If the target year for phasing out conventional PCs has been set, the tax incentive provided for EVs can be reduced on a year-on-year basis.	The Government is now offering FRT concessions of up to $97,500 for e-PCs, and purchaser of e-PC who scraps and de-registers his/her eligible old PC and then first registers a new e-PC under the 'One-for-One Replacement' Scheme can enjoy a higher FRT concession of up to $250,000. In addition to the said FRT concessions, annual vehicle licence fees for e-PCs are far lower than those for conventional PCs, and the electricity tariffs incurred for running e-PCs are also less expensive than the fuel charges incurred for running conventional PCs. As the e-PC technologies have become mature, more and more affordable e-PC models with longer driving range have entered into the local market. That said, popularisation of e-PCs requires mass supply of affordable models. The

Summary of views	Government's responses
2.3. As EVs are competitive products, their prices should be determined by market forces, and the Government should not provide tax incentives for purchasing EVs. 2.4. Various transport policies and measures should be implemented, including provision of road pricing concessions for EV owners, and concessionary tolls for EVs using government tunnels, etc.	policy of full exemption of FRT, however, would be tilted in favour of high-priced e-PCs and would undermine the popularisation of a wide range of EV models. In view of this, the Government introduced a revised FRT concession with an upper limit and the 'One-for-One Replacement' scheme to ensure that the policy will not be inclined to high-priced e-PCs and could contain the increase in PCs after reviewing the arrangement of FRT for EVs in 2017 and 2018. As stated in our response in part 1 above, the Government is actively preparing to update the *Clean Air Plan* and formulate a roadmap on the popularisation of EVs to, among other things, further examine the measures to improve air quality, as well as the policy objectives and plans to promote the use of EVs, including the study on formulating the direction and roadmap to ban the sale of fuel-driven vehicles, and reviewing the said arrangements for FRT concessions. After completing the review, we will announce the outcome and the way forward as soon as practicable. We have no plan to provide other additional financial incentives for the time being. As regards tolls for tunnels and bridges or road pricing, they are implemented based on traffic management considerations, with a view to adjusting the traffic flow and alleviating traffic congestion for the public's convenience. In line with the said rationale, the Government currently has no plan to offer concessions in tolls for tunnels and bridges or road pricing, or introduce specific

Summary of views	Government's responses
	traffic management measures for EVs.
2.5. Additional financial incentives should be provided to encourage enterprises to set up EV fleets. 2.6. Hire car permits (HCPs) should be reviewed to incorporate clauses for using EVs, so as to further encourage the switch to EVs.	Financial incentives play an important role in encouraging enterprises to use EVs. Apart from the above FRT concessions and lowered e-PC annual vehicle licence fees, enterprises which procure EVs are allowed 100% profits tax deduction for capital expenditure on EVs in the first year of procurement. The Government also encourages the transport sectors to test out green innovative transport technologies through the Pilot Green Transport Fund while promoting the establishment and enhancement of charging network. Under the current transport hierarchy, hire car is positioned as a transport mode for providing high-end personalised services which may not be met by regular modes of public transport. Under Regulation 14(3)(b) of Road Traffic (Public Service Vehicles) Regulations (Cap. 374D), the Commissioner for Transport may issue a HCP if he/she is of the opinion that the type of hire car service specified in the application is 'reasonably required'. This is the criterion upon which TD will assess and recommend if any HCP should be approved. According to legal advice, the use of EVs or not is irrelevant for the purpose of assessing whether the hire cars service was 'reasonably required'. Besides, the relevant clauses for the use of EVs

Summary of views	Government's responses
	may limit the choice of luxury vehicles for hire cars market.
'Pilot Green Transport Fund' (PGTF)	
2.7. The PGTF should increase the funding amount and flexibility. 2.8. Cancel the requirement of the 'One-for-One Replacement' for the old vehicles of the same class. 2.9. Cancel the requirement of not being allowed to participate in the ex-gratia payment scheme for phasing out Euro IV diesel commercial vehicles. 2.10. Amend the requirement for the applicant to engage in related transport service for one year. 2.11. Introduce a vehicle-to-everything (V2X) system to proactively monitor the usage of subsidised vehicles in order to ensure fair and equitable use of public fund. 2.12. Introduce a user-agent	To further promote the wider use of green innovative transport technologies by the transport sectors, the EPD has consulted and adopted the opinions of the 'PGTF Steering Committee' (Steering Committee) of which members comprise representatives elected by the transport sectors, experts and academics in green innovative transport technologies, as well as representatives of the EPD, EMSD, ITC, and TD. In summary, we will rename the PGTF to the 'New Energy Transport Fund' and extend the funding scope to cover the following two parts: (a) the original funding scope of the PGTF will be categorized as 'Applications for Trial' and detailed conditions of subsidy will also be refined, including extending the types of technologies to be subsidised and the eligibility for these applications, raising the subsidy levels and caps, shortening the trial period from two years to one year, and optimising the vetting procedures to shorten the time required for approval; (b) a new section of 'Applications for Use' will be created to subsidise the transport sectors and charitable/non-profit organizations to directly procure products of technologies that have been proven under the PGTF to be relatively

Summary of views	Government's responses
system so that suppliers can assist in preparing the relevant applications. 2.13. Accept application in personal capacity (private company).	mature and suitable for local use. Members of the Steering Committee are of unanimous view that the public fund shall be used effectively and shall subsidise real operators of the transport sectors such as companies, commercial vehicle owners and charitable/non-profit organisations, etc. The Government shall prevent them from reselling the subsidised products for profit, using the subsidised products for non-commercial or non-charitable work purposes, causing a significant increase in number of vehicles, and receiving double benefit. Moreover, the subsidised products shall be affixed with the fund labels for identification and monitoring purposes. In this connection, the Government should establish relevant applicant requirements and funding conditions. The results of the review and relevant recommendations received unanimous support from the Steering Committee in early January 2020, and were reported to the Panel on Environmental Affairs of the Legislative Council on 22 January 2020. The Legislative Council approved the injection of an additional $800 million into the fund in May 2020 to support the extension of the funding scope. We will take forward the relevant recommendations in the second half of 2020 progressively and will report to the Panel on Environmental Affairs of the Legislative Council

Summary of views	Government's responses
	in due course.
2.14. The Government should review with coach operators on how to provide flexible arrangement for issuing passenger service licences (PSLs) to electric coaches on trial, so that when the performance of any of these electric coaches on trial is way below the operational requirements, the operators can meet their operational needs by using reserve vehicles to provide services to, say, hotels and schools, so as to solve the problem caused by the strict restriction of the current PSLs.	As for NFB services (including tourist coach services), under the Road Traffic Ordinance (Cap. 374) and its subsidiary legislation, operators must hold valid PSLs and passenger service licence certificates, while NFBs should also obtain appropriate service endorsements in order to operate relevant services. In approving the applications for PSLs, the TD mainly takes into account factors such as the need for the services to be provided by the applicant, the level of services already or planned by other public transport operators, traffic conditions in the areas and on the roads where the services are to be provided, and the standard of service to be provided by the applicant, etc. Operators are free to choose the appropriate vehicle types (such as electric buses, hybrid buses or conventional diesel buses) having regard to their operational needs.
2.15. To encourage hotels to adopt electric buses or light buses to provide shuttle bus service, the Government should simplify the procedures for applying for the relevant service licences and increase the quota of the licences. The Government should consider issuing temporary PSLs to electric non-franchised buses (NFBs).	Currently, the TD has already exercised flexibility in processing the applications for various service endorsements for reserve vehicles according to the needs of individual services. The TD will continue to maintain close communication with the trade to understand the needs of the industry and provide assistance to facilitate the sustainable and healthy development of the industry. If an operator, who currently holds a valid PSL and obtained appropriate service endorsements, wishes to use electric NFBs, he/she can submit an

Summary of views	Government's responses
These PSLs should remain valid before the vehicles concerned are scrapped.	application to the TD to add the relevant vehicles in the endorsed services without applying for another PSL.
Promoting the use of electric public transport vehicles	
2.16. The use of electric public transport vehicles should be promoted, including promoting the use of double-deck electric buses in franchised buses, and promoting the application of electric taxis in Hong Kong. 2.17. New clauses should be included in the bus franchises to stipulate that franchised bus companies (FBCs) have to use a certain proportion of electric buses. 2.18. Since it is very difficult to develop large scale charging depots for electric buses due to land restrictions, it is not practicable to change all conventional franchised buses into electric buses. 2.19. As there are limited choices of models for electric buses in the local market, the Government should explore	<u>Electric franchised buses</u> The feasibility of deploying electric franchised bus services throughout Hong Kong depends very much on the maturity of development of electric bus technologies, their prices and suitability for use in Hong Kong. It is incumbent upon us to fully test and prove that the relevant technology is suitable for the local environment and the actual modus operandi of the public transport sector before introduction of electric buses on a large scale. As at the end of 2019, there are about 6,200 licensed franchised buses in Hong Kong. About 95% of them are double-deckers and the remaining are single-deckers. Currently, the technology of double-deck electric buses is still developing and there are very few models available in the international arena. The technology of single-deck electric buses is already used in places outside Hong Kong, but the operation in Hong Kong is subject to further test to ascertain the suitability for use in Hong Kong. The Government fully subsidises the FBCs to purchase 36 single-deck electric buses (including 28 battery-electric buses and eight supercapacitor buses and their charging facilities) for trial on a

Summary of views	Government's responses
ways to facilitate the introduction of more models. 2.20. It is recommended that battery swapping mode should be adopted for electric buses instead of charging in order to lower the cost.	number of routes to test out their operational performance in local conditions. We will continue to monitor the performance of electric buses under the trial, and collect and analyse the trial data. Upon completion of the trials, the Government will consider the way forward to encourage FBCs in using more electric buses, taking into account the affordability of the FBCs and passengers. As for charging facilities, we are currently working with FBCs to install new charging facilities at bus termini to facilitate top-up charging for in-service single-deck electric buses in daytime, improve driving range for full-day operation and see whether the mode of daytime charging can cope with the high operation frequency of bus service in Hong Kong. <u>Electric public light buses (e-PLBs)</u> The Government has earmarked $80 million to launch a pilot scheme for e-PLBs and subsidise about 40 e-PLBs running on various routes for a trial for 12 months. We expect to trial e-PLBs and charging facilities from different suppliers, so as to test their operations under local environment and compare their performances. Initially, green public light buses (PLBs) will be the major participants in the pilot scheme as they are running on relatively short routes, requiring a relatively lower driving range and charging power, and more suitable for trial. As they are running on fixed routes, the daily operation of e-PLBs can be supported by installing charging facilities at the

Summary of views	Government's responses
	PLB termini, public transport interchanges or other designated places where they operate. The Government engaged a consultant in March 2019 to study and take forward the pilot scheme, including developing the basic specifications and requirements for e-PLBs and the associated charging facilities that suit Hong Kong's operating environment, identifying suitable PLB routes for trial under the pilot scheme and consulting the PLB trade about their intention of joining the pilot scheme and using e-PLBs. The study will be completed in the second half of 2020. Routes for the trial will be determined subject to the recommendations of the study report and the views of the trade. Taking into account the lead time for manufacturers to develop and manufacture e-PLBs and the associated charging facilities, we anticipate that the pilot scheme can commence in around mid-2023. <u>Electric taxis</u> Under general operational mode, taxis are being operated daily for more than 20 hours and over 500 km in mileage. Suitable electric taxis models and the establishment of a quick charging network for drivers to charge their electric taxis in time are both required for the promotion of electric taxis in Hong Kong. The Government has commissioned a consultant in October 2019 to look for suitable sites for setting up quick charging stations in various districts of Hong Kong, and will continue to encourage suppliers to introduce more electric

Summary of views	Government's responses
	taxi models that suit local use. We understand that some taxi operators are also looking for electric taxi models that suit the operation needs of taxis in Hong Kong, in preparation for the trial of electric taxis in the future.
2.21. The weight restrictions applicable to electric commercial vehicles (e-CVs) should be relaxed to facilitate the introduction of EVs that best suit the local business operations.	All along, the Government welcomes the trade to introduce commercial EVs that are suitable for use in Hong Kong. As of May 2020, 122 models of EVs have been approved for registration and use in Hong Kong, among which 32 are commercial vehicles, including light goods vehicles, buses, light buses and taxis of brands from Europe, Japan and the Mainland. To safeguard the structural and operational safety of roads, the TD would, as stipulated in the Road Traffic (Construction and Maintenance of Vehicles) Regulations (Cap. 374A), limit the maximum gross weights for various classes of vehicles, having regard to the road environment and design in Hong Kong, with no differentiation between EVs and non-EVs. Since relaxation of the maximum gross weights of vehicles involves such considerations as structural and operational safety of roads, the Government would need to handle the matter with great caution. Under the current legislation, in case any particular road users would need to use overweight vehicles due to exceptional circumstances, the TD may give special consideration and grant exemption on a case-by-case basis provided that the safety of other road users and the road structure would not be

Summary of views	Government's responses
	compromised. At the same time, the Government has amended the law to relax the maximum gross vehicle weight restriction of light buses to 8.5 tonnes, in order to accommodate and facilitate the development needs of the industry by providing the trade with more choices on light bus models (including electric light buses). The new requirement has taken effect since 5 July this year.
3. EV charging facilities	
Car parks of existing private residential buildings	
3.1. The Government should expedite the implementation of the $2 billion pilot scheme, provide details of the scheme and clear installation guide as early as possible, and enhance the application procedures, preferably assigning a one-stop approving department to handle the applications. 3.2. The Government should provide one-stop government services, co-ordinate the installation of charging facilities, and resolve the problems of long installation time of the charging facilities and the involvement of a	The Government is preparing for the launch of a $2 billion pilot scheme in the second half of 2020 to subsidise the installation of EV charging-enabling infrastructure in car parks of existing private residential buildings, so that owners of individual parking spaces can install chargers according to their own needs in future. As the pilot scheme involves multi-departmental collaboration on issues covering property management, land lease, building modification, fire safety, technical issues, tendering, contract administration, etc., we have established an Inter-departmental Working Group to advise on areas including application procedures and technical issues of the installation works for refining the implementation details of the pilot scheme. The Inter-departmental Working Group comprises representatives from the EPD, Development Bureau, Buildings Department,

Summary of views	Government's responses
number of departments (e.g. the Architectural Services Department, Buildings Department, LandsD, Highways Department, TD, Fire Services Department, etc.). 3.3. The Government should provide a one-off financial subsidy to offset the necessary cost arising from adding or altering the power supply system in the existing buildings (to provide additional power required for charging EVs in the car parks). 3.4. As the pilot subsidy scheme will not benefit property owners who do not own any parking spaces and those who do not use EVs, the Government should explore ways to encourage these people to support the modification works proposed to be carried out in the car parks of their residential buildings/housing estates. 3.5. The Government should	EMSD, Fire Services Department, Home Affairs Department, Housing Department, LandsD, and PlanD. The Government expected that with the existing gross floor area (GFA) concession mechanism and the launch of the pilot subsidy scheme, some 80,000 parking spaces in private buildings (i.e. about a quarter of all parking spaces in private buildings) would be EV charging enabled in about 3 to 4 years.

Summary of views	Government's responses
study how it can better encourage owners' corporations and property developers to install EV charging facilities in existing and new buildings.	
3.6. It is suggested that the Government should strengthen communication with owners' corporations and provide sufficient incentives and assistance. Moreover, the Government should arrange adequate and effective publicity and education activities, so that most property owners (including those who do not own parking spaces) will recognise the advantages of EVs, and support and encourage owners' corporations in applying for the pilot subsidy scheme. 3.7. The Government should launch publicity activities to dispel the misunderstanding that the provision of paid charging services in buildings may breach the land leases and the lease conditions.	To encourage existing private housing estates to install EV charging facilities, the EPD organised 13 workshops or briefing sessions in 2019 to encourage owners' corporations, owners' committees and property management companies to support installation of EV charging facilities in existing buildings. When the EPD rolls out the $2 billion pilot subsidy scheme in the second half of this year, we will arrange seminars to brief owners' corporations, property managers and general public the details of the pilot scheme and encourage their support and participation to the scheme. We will also promote the scheme through various channels, including setting up a website, social media, publicity leaflets, etc. Besides, the EPD plans to send staff to private housing estates to brief owners' corporations, owners' committees and property management companies the pilot subsidy scheme and the advantages, including air quality improvement, brought by the installation of charging facilities in the car parks. Our staff will also answer questions related to the scheme and assist them in submitting

Summary of views	Government's responses
	applications. As for the lease condition, each case has to be considered on its own depending on the lease conditions and the individual circumstances. In general, the provision of paid EV charging services associated with ancillary car parking spaces required to be provided under the lease would not contravene the lease conditions. The Government will continue to strengthen its efforts in communication, publicity and education, and provide technical assistance to building owners, owners' corporations, owners' committees and property management companies regarding the installation of EV charging facilities.
Car parks of new buildings	
3.8. Amendments should be made to the Hong Kong Planning Standards and Guidelines (HKPSG) to suggest that all parking spaces in new buildings should be equipped with EV charging facilities. 3.9. Whilst the Government has tightened the granting of concession on GFA for new private buildings from 2011 to encourage developers to	The EPD is currently updating the relevant guidelines on EV charging, and the relevant guidelines on EV charging facilities in the HKPSG, recommending that new charging facilities to be installed should be medium chargers instead of standard ones, so as to cope with the latest development and actual need of EVs and the associated charging technologies. The Government has tightened the granting of concession on GFA for new private buildings from April 2011 to encourage developers to install EV charging-enabling infrastructure, including provision of sufficient power supply, cabling and

Summary of views	Government's responses
provide EV charging-enabling infrastructure for the private car parks of new buildings, the requirements for these infrastructure are not stringent. For instance, there is no specified standard of chargers and no mandatory requirement for developers to provide chargers for the use of car owners. 3.10. Installation of EV charging facilities at every parking space of new private residential buildings and commercial developments should be made mandatory.	conduits for all parking spaces in the private car parks of the new buildings concerned. The policy helps to avoid owners of parking spaces being unable to install the required EV chargers owing to constraints in power supply capacity, cabling and conduits, etc. when EVs are widely used in the future. Nevertheless, the Government should be aware of the number of existing EVs when drafting the amendments to avoid wastage caused by installation of too many EV charging facilities at the current stage. As mentioned above, most of the private car parks of new buildings are equipped with EV charging-enabling infrastructure, EV owners can install chargers at their own expense if necessary.
Car parks of public sector	
3.11. The Government should make good use of the resources of the HA, upgrade infrastructure as quickly as possible and install medium and quick public EV chargers on a large scale.	HA provides car parking facilities in its public housing developments primarily to serve the residents of the estates/courts concerned and their visitors for parking their vehicles. To support the Government's policy to promote extensive use of EVs, HA has been working with power companies since 2011 to provide EV chargers (including standard, medium and quick chargers) at some hourly car parking spaces in HA's existing car parks. Subject to demand and technical feasibility, HA has also been providing standard chargers at monthly car parking spaces in its existing car parks. In addition, in accordance with the

Summary of views	Government's responses
	recommendations under the HKPSG, HA has been installing standard EV charging facilities in the car parks of new public housing developments. As at the end of March 2020, HA has installed EV chargers at about 250 hourly car parking spaces and 830 monthly car parking spaces in its car parks. At present, there are not many EVs parking in HA's car parks and some monthly car parking spaces installed with EV chargers have not yet been rented by EV users. Since mid-2019, in further support of the Government's initiatives to promote the use of EVs, HA has initiated a feasibility study for the installation of additional medium chargers at some hourly car parking spaces, subject to the electricity loading of individual car parks. At present, there are about 40 medium or quick chargers in HA's car parks. For best use of resources, HA will consider increasing the number of medium chargers gradually in view of their usage situation.
3.12. Has the Government requested the Link to provide additional EV charging facilities in its car parks?	We wrote to various corporations including the Link in November 2017, inviting them to install medium and quick EV chargers in their car parks, as well as upgrade their existing standard chargers to medium ones. The Link replied in December the same year, stating that they would support the Government's policy of promoting the wider use of EVs. The Link has been cooperating with related

Summary of views	Government's responses
	organisations to install all kinds of EV chargers in its car parks since 2009, and most of the existing chargers have been upgraded to medium or quick chargers. The Link has also been providing EV free parking privilege to support and promote the use of EVs, so that pre-registered EV owners can enjoy free parking and charging at designated car parks.
3.13. Please provide the number of parking spaces installed with EV charging facilities in the car parks of HA, the HKHS and the Link.	As at the end of June 2020, there are about 56,000 parking spaces in car parks managed by Link. Among them, about 500 parking spaces are installed with EV chargers. The respective number of EV chargers installed at car parks managed by HA and the HKHS are tabulated at **Annex II**.
3.14. The balloting arrangements for HA's monthly parking spaces and parking spaces of Home Ownership Scheme courts fail to ensure that EV owners can rent parking spaces equipped with EV chargers, resulting in a wastage of resources as such parking spaces cannot be used properly. 3.15. Although some of the	As at the end of March 2020, HA has installed EV chargers at about 830 monthly car parking spaces in its car parks. Currently, not many EVs are leasing the monthly car parking spaces in HA's car parks. Due to acute demand for car parking spaces in HA's car parks and the main users for car parking spaces being non-EVs, HA is not able to give priority to EV users in leasing monthly car parking spaces based on the principle of fair allocation. HA will continue to keep in view of the usage of the car parking spaces and make appropriate arrangements according to actual situation.

Summary of views	Government's responses
monthly parking spaces in HA's car parks have already been installed with EV charging-enabling infrastructure, the users in need still have to install individual EV chargers at their own expense. However, as the supply of these parking spaces is inadequate to meet the demand, they will be allocated by balloting each year and there is no guarantee that the users can continue to use their EV chargers a year later. Such allocation mechanism discourages users from installing EV charges at such car parks.	
3.16. MTR should install additional EV chargers in the car parks under the Park and Ride Scheme.	MTR supports the Government's overall policy of promoting the use of EVs, and will take into account factors including capacity of individual car parks, compatibility of electricity supply facilities, demand of parking lots, convenience to users, etc., and progressively install additional EV chargers in the car parks managed by MTR.
Government car parks	
3.17. The Government should upgrade the slow chargers to medium and quick chargers, and to substantially increase	Regarding the charging arrangements for e-PCs, it has always been the Government's policy direction that e-PC owners should perform daily charging of their e-PCs at their home, workplace or other

Summary of views	Government's responses
the number of public charging facilities. 3.18. Chargers should be properly maintained.	suitable places. Public charging networks are mainly supplementary facilities for EV owners to top up their batteries to meet occasional needs during their trips. They do not serve as daily charging facilities or their alternatives. To meet the charging needs arising from the on-going growth of e-PCs, the Government has upgraded the 370 standard chargers installed at public car parks of the TD and the Government Property Agency (GPA) to medium chargers from 2016 to 2018. Apart from the 61 standard chargers located at the TD car parks which will be demolished and the 94 chargers which have both standard and medium charging functions, standard chargers at the car parks of the TD and the GPA that are open for public use have been upgraded to medium chargers. In a small place like Hong Kong, the daily mileage of PCs in general is only a few tens of km. By charging with medium chargers for less than an hour, EVs may run for at least another 30 km, which is sufficient to top up their batteries at times of occasional needs. Hence, medium chargers would serve as the backbone of public charging facilities. Furthermore, at present, among the private car parking spaces (5,412 parking spaces in total) in the car parks managed by the TD and the GPA that are installed with chargers and open for public use, 11.2% (608 parking spaces) are provided with

Summary of views	Government's responses
	altogether 697 EV chargers and 13 EV chargers by the Government and non-government sector respectively. The number of government public chargers was increased by a total of 191, from 782 at the end of 2018 to 973 at the end of June 2020. The Government also allocated $120 million last year for installing additional medium chargers at 70 government car parks which are open to public. Over 1,000 additional public chargers are expected to be in place by 2022, bringing the total number of chargers to about 1,800. The installation works of the 169 medium chargers, started in 2019-20, were completed in end-April this year. The testing works are in progress and the chargers will be open for public use progressively. Furthermore, we anticipate that about 570 and 460 medium chargers will be installed in 2020-21 and 2021-22 respectively. We will continue to report to the Legislative Council Panel on Environmental Affairs on the progress in promoting the use of EVs in due course, including the progress of installing additional medium chargers in government car parks. As soon as the Government is aware of the malfunction of the government public chargers through different channels, the maintenance workers will be immediately notified to inspect on site and carry out the necessary maintenance work to ensure that the charger can resume normal operation as soon as possible.

Summary of views	Government's responses
3.19. There should be government public parking spaces that are used exclusively for charging; priority should be given to EVs to use parking spaces installed with charging facilities; car park owners and management offices are advised to prohibit conventional vehicles from occupying parking spaces installed with EV chargers and consider imposing a fine for non-compliance.	e-PCs only account for about 2% of the total number of registered PCs at present. Given the supplementary nature of charging facilities provided in the government car parks (including the charging facilities provided in the government public car parks) under the government policy (i.e. e-PC owners should perform daily charging of their e-PCs at their home or workplace; and public charging facilities are mainly for EV owners to top up their batteries to meet occasional needs), limited parking space resources, and the principle that users of EVs and all other vehicles should be treated alike for full utilisation of parking space resources, private car parking spaces (whether they are installed with chargers or not) in government public car parks managed by the TD and the GPA are currently open to all vehicles. That said, contractors of the TD and the GPA, depending on the actual utilisation situation of the car parks, arrange for traffic cones to be placed at parking spaces installed with charging facilities to reserve such spaces for priority use by EVs whenever practicable. New EV chargers will be generally installed at relatively inconvenient locations in the car parks (e.g. parking spaces away from lifts and entrances/exits of the buildings) as far as practicable to maximise the chance for EVs to use the parking spaces installed with chargers.
3.20. It is proposed that idle public car parks (e.g. Hong Kong Tennis Centre on Wong Nai Chung Gap Road) should	Outsourced car parks under the LCSD are open 24 hours and some of the car parks are equipped with charging facilities for drivers of EVs. The LCSD and relevant government departments will study

Summary of views	Government's responses
be open to EV owners for charging purpose at night.	the feasibility of the proposed installation of charging station at the Hong Kong Tennis Centre under the LCSD.
Provision of charging facilities at suitable on-street parking spaces and petrol filling stations	
3.21. Charging facilities should be provided at suitable on-street parking spaces (including new on-street parking spaces) and petrol filling stations as soon as possible. 3.22. Conversion of existing on-street parking meters into charging stations is not recommended to avoid competition between EV owners and petrol vehicle owners.	Provision of on-street parking spaces is mainly to cater for short-term parking needs, and such spaces are usually installed with parking meters to accelerate the turnover of parking spaces for use by more drivers. Taking into account the power supply and space constraints, potential impact on nearby traffic as well as related considerations such as other drivers' parking needs, the Government has to look for suitable on-street parking spaces to install charging facilities. Around 10 possible sites have initially been identified for such installation and their feasibility is under detailed study. When these sites are confirmed to be suitable for installing on-street charging facilities, the Government will study on introducing a pilot scheme on installation of charging facilities. Regarding the provision of charging facilities at petrol filling stations, apart from the need to overcome fire and gas safety issues, the petrol filling stations in Hong Kong are in general relatively small and the potential for adding chargers is not high. In addition, vehicles require more queuing time for electricity charging than that for petrol refilling, which will also affect nearby traffic. Therefore, petrol filling stations are

Summary of views	Government's responses
	in general not considered as suitable location to equip with chargers.
Setting up public quick charging stations	
3.23. It is recommended that quick chargers should be installed in larger open car parks. 3.24. It is recommended that more idle or under-utilised existing public car parks should be identified for installation of quick chargers.	To enable e-PC owners to top up their batteries quickly to meet occasional needs during their trips, the Government commissioned a consultancy study in October 2019 to look for suitable sites in 18 districts of Hong Kong to set up public quick charging stations. Upon completion of the study, we will explore suitable options for developing quick charging stations.
Charging for commercial vehicles	
3.25. Charging stations should be set up in, say, shopping centres, schools, industrial parks, government buildings, etc. in various districts. The operation of the stations should be contracted out to the suppliers of EV chargers to provide chargers with different standards (including 7kW/22kW or even 40-60kW which is quicker) for relevant vehicles in need to charge at night or during their trips.	Please see our response to part 3.17, 3.20, 3.21 and 3.23 to 3.24.
3.26. As EVs have no tailpipe	Regarding using the land in rural areas for vehicle

Summary of views	Government's responses
emissions and are quieter, the land use of some sites in rural areas and without immediate development needs can be changed to permit the use as vehicle parks dedicated for EV charging. The types of vehicles that can access to these car parks can be restricted when necessary (e.g. PCs and light goods vehicles) so as to minimise the pressure on the traffic and the environment. 3.27. The Government can relax the restrictions on the tenancy term and power supply facilities when granting sites for outdoor temporary car parks, and encourage these car parks to work with the suppliers of EV chargers to facilitate the operation of commercial charger stations.	parks dedicated for EV charging, the proponent may refer to the relevant Outline Zoning Plan (OZP) and its Notes for land use zoning of respective site, and whether the use is always permitted or requires permission from the Town Planning Board (the Board). If planning permission from the Board is required, the proponent may submit planning application to the Board in accordance with the Town Planning Ordinance. In addition, the fixed term for a Short Term Tenancy (STT) for fee-paying public car park should not normally exceed one year. Depending on the individual nature and circumstances of the STTs, where there are policy justifications supported by the relevant bureaux/departments, the Government may consider to impose a longer fixed term.
Plans for charging facilities in new development areas	
3.28. The Government should set clear objectives and standards for taking forward the installation of EV charging facilities while	The HKPSG were amended in June 2011 to recommend 30% of car parking spaces for PC in new buildings to be provided with EV standard charging facilities.

Summary of views	Government's responses
planning for all new development areas.	As stated in our response in part 3.8 above, the EPD also intends to update the relevant guidelines on EV charging, and the relevant guidelines on EV charging facilities in the HKPSG, recommending that new chargers to be installed should be medium chargers instead of standard ones, so as to cope with the latest development of EVs and the associated charging technologies.
Provision of tax/rates concessions to encourage the installation, operation or use of EV charging facilities	
3.29. Tax or financial incentives should be introduced to encourage building management offices and owners' corporations to be more positive about the installation and operation of charging facilities. 3.30. It is recommended that tax/rates concessions should be provided to individual car park owners who will install/have installed EV charging facilities. 3.31. It is suggested that concessions should be provided to encourage EV owners to try out the 'portable EV chargers' co-developed by the Hong Kong Productivity Council (HKPC)	The Government's priority in the next few years is to spearhead the $2 billion pilot subsidy scheme to assist car parks of existing private residential buildings to install EV charging-enabling infrastructure, and encourage developers to provide EV charging-enabling infrastructure in private car parks of new buildings through the current granting of GFA concessions. While the Government currently has no plan to offer other subsidy schemes (such as tax/rates concessions) to encourage the installation, operation or use of EV charging facilities, we will continuously keep in view the development of charging facilities in the market and review the relevant policies and measures in due course. Besides, the Government has already implemented a series of policies and measures to promote the use of EVs, and currently has no plan to provide concessions to EV owners to try out the 'portable EV chargers' co-developed by the HKPC and a local innovation and technology company.

Summary of views	Government's responses
and a local innovation and technology company.	
3.32. A business model study should be conducted to determine the prerequisites for assessing the business viability of the privately-run public charging network. 3.33. Introduce a 'charger contracting system' and make use of electronic payment methods to avoid prolonged occupation of the parking spaces for charging. The contractors can recover the investment costs by offsetting their input to the relevant charging facilities against charging fees and parking fees.	In the long run, public charging networks must be operated on a fee-charging basis so as to encourage commercial companies to set up privately-run public charging networks and operate on commercial principles. The Government therefore plans to introduce charging fee for the public charging service, which is currently free of charge, provided at the Government's car parks in the long term, and is studying the appropriate mode of fee-charging.
Standards of charging facilities	
3.34. Discussions should be held with the parties concerned as soon as possible to draw up the standards of charging facilities in Hong Kong based on factors such as the supply of EVs and cross-boundary flow.	At present, there is no unified international EV charging standard. The standards of the International Electrotechnical Commission (IEC) are mainly adopted by Europe while the standards of the Society of Automotive Engineers (SAE) are mainly adopted by North America and Japan. GuoBiao (GB) is a set of national standards adopted by the Mainland. Currently, most of the vehicles in Hong Kong adopt the IEC standards

Summary of views	Government's responses
	and the IEC Standards have a better compatibility. In general, chargers that comply with the IEC standards can match with charging cables equipped with appropriate plugs to charge EVs that adopt IEC standards, SAE standards or GB standards. As for multi-standard quick chargers, the situation of using multi-standard quick chargers in other countries is still common in order to cater for the needs of EVs with different charging standards. The Government will closely monitor factors like the situation of the local EV usage and supply, as well as the development of international EV standards to decide on the way forward.
3.35. A list of compliant charging facilities that meet the electrical safety standards and installation guidelines should be issued.	Prior approval is not required for EV charging facilities, the Government, therefore, does not have a list of compliant products. EV charging facilities are fixed electrical installations and shall comply with the relevant requirements of the Electricity Ordinance (Cap. 406) and its subsidiary Regulations. Electrical work on EV charging facilities, including design, installation, commissioning, inspection, testing, maintenance, modification and repairing, shall be carried out by registered electrical contractors and registered electrical workers of the appropriate grade. As for the guidelines on installation of EV charging facilities, please refer to the 'Technical Guidelines on Charging Facilities for Electric Vehicles' issued by the EMSD and the installation guidelines issued by the manufacturers of EV charging facilities.

Summary of views	Government's responses
Instant electronic information on the status of chargers	
3.36. A mobile application should be developed to provide the status and reservation service for all public charging facilities so as to facilitate the use of public charging facilities, and enhance the utilisation rate of these facilities.	To support the development of smart city, the Government plans to set up a smart system for the Government's public EV charging network. The features will include instant electronic information on the status of chargers, payment system and management facilities for parking spaces equipped with chargers. The Government will also explore the feasibility of including other features, such as reservation for parking spaces equipped with chargers. There are also private companies in the market which install charging facilities at the parking spaces of EV owners and provide charging service. Some EV charging service providers even provide EV owners with the status of chargers and charger reservation service through mobile applications.
4. Government fleet	
4.1. The Government should take the lead in setting up an EV fleet and make a pledge that various departments will switch to EVs when replacing their existing vehicles that are due for retirement. 4.2. The Government should increase the percentage of EVs in its fleet and take the lead in using EVs; and	Subject to the operational requirements of the departments and the supply of EV models in the market, the Government has taken the lead in using EVs since 2009. As at the end of May 2020, there were 215 EVs of various models in the government fleet, which were mainly small and medium cars accounting for 9.0% of the total number of government cars, higher than the overall penetration of electric PCs in Hong Kong (2.3%). Whether government departments can use EVs

Summary of views	Government's responses
consider updating the regulatory requirements for various types of vehicle hiring services to require service providers to include a certain number of EVs in their fleets.	depends mainly on the development of EV technologies (including vehicle performance, durability of batteries, the highest mileage sustained after a full charge, etc. and whether these can meet the daily operational needs of the departments). Currently, the driving range of electric cars has improved generally. As regards specialised vehicles (such as refuse collection vehicles), buses, medium and heavy goods vehicles, EV models suitable for departments' operational needs are still not available in the market. For electric motorcycles, their battery performance is still unsatisfactory. For electric vans, since only a few models are available for coping with uses with lower mileage and payload, they only account for about 1.6% of the relevant type of government vehicles. To support the policy of promoting wider use of EVs, the Government will keep abreast of the latest technological development of EVs and encourage departments to use EVs in replacing their retiring vehicles subject to the availability of suitable models in the market and the performance of EVs in meeting departments' operational needs.
4.3. Former Chief Executive Leung Chun-ying stated in the 2014 Policy Address that the Principal Officials would take the lead in using EVs on a trial basis. However, the promise has not yet been	The former Chief Executive and Principal Officials used a model of electric large saloon on a trial basis from July to October 2014. Considering that this model of electric large saloon could not meet the actual requirements of the Principal Officials, the Government did not purchase this model for the use of all Principal Officials.

Summary of views	Government's responses
fulfilled so far.	However, in order to test the performance, durability and maintenance requirements, the Government has purchased one such electric large saloon for use by the Secretary for the Environment starting from January 2016.
5. Recycling and handling of EV batteries	
5.1. The Government should strengthen the promotion of recycling of retired EV batteries, examine ways to facilitate the development of the recycling industry for retired batteries of local EVs, consider providing space for the construction of battery recycling industrial park, and formulate specific new measures for handling of batteries. 5.2. Whether the Government will study the enactment of legislation to formulate a new regulatory regime similar to the existing producer responsibility scheme. 5.3. It is suggested that in the introduction of EVs, the Government should request the vehicle manufacturers and battery suppliers (including	Waste EV batteries have to be properly handled under the Waste Disposal Ordinance (Cap. 354) and its subsidiary Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C). Most EV suppliers have currently engaged licensed collectors to collect the waste batteries of their brands' EVs. After proper preliminary treatment (e.g. sorting, discharging and insulating) and packaging, these waste EV batteries are exported to appropriate treatment facilities in Japan, Korea or Belgium for recycling. Although the age of most EVs in Hong Kong remains low and the number of retired EV batteries remains small at this stage, as EVs will become more popular in future, the EPD will embark on a study on how to promote recycling of EV batteries. Apart from analysing overseas experiences, the EPD will maintain close liaison with the trade and EV suppliers to explore solutions that are applicable to local situation. The Government, in conjunction with research institutions and universities, carried out relevant studies on the technical feasibility of second life application of retired batteries from EV. The studies show that it is technically feasible to

Summary of views	Government's responses
the OEM battery factory) to provide corresponding after-sales services by undertaking the battery warranty, maintenance and recycling work in Hong Kong.	reassemble retired batteries of the same brand for second life application. On the other hand, as batteries of different brands have their own operating and protective characteristics, it is technically difficult to reassemble them for second life application, and there has been no successful case at this stage.
6. EV related support measures	
6.1. Provide adequate training regarding the repair and maintenance of EVs, especially for high voltage and high current electric commercial vehicles.	The Vocational Training Council (VTC) currently offers two in-service training programmes on 'New Energy Vehicle Insight' and 'Hybrid Vehicle Power Train' which aim at equipping trainees with knowledge in the structure and operation of EVs, and safety procedures in handling high-voltage electricity. In addition, the VTC also offers full-time training programmes related to automobile maintenance, including the Higher Diploma (HD) in Automotive Engineering and Diploma of Vocational Education (Automotive Technology). The two programmes are expected to offer a total of more than 260 training places each year in the 2019/20 and 2020/21 academic years. The VTC has embedded the professional knowledge relevant to EVs, such as design, operational modes, safety standards, and maintenance skills, etc. into the HD in Automotive Engineering as well as other pre-employment programmes at different levels related to automobiles. The VTC will continue to update the content of relevant programmes in a timely manner having regard to the development of EV-

Summary of views	Government's responses
	related technologies and industry needs. The EMSD is closely liaising with the trade and the VTC on the training of maintenance mechanics for EV. The VTC is also studying to develop a basic training course related to the maintenance of EV and hybrid vehicle for vehicle mechanics.
6.2. Cooperate with the private sector to enhance the equipment for and the staff capability in EV testing at the Car Testing Centres.	The TD has been cooperating with the private sector in respect of vehicle examination. Currently, the annual examinations for PCs, goods vehicles, special purpose vehicles and trailers are all conducted by the privately-run Designated Car Testing Centres or vehicle examination centres authorised by the TD. The annual examination items for EVs are similar to those for other vehicles, such as checking the vehicle body structure, suspension, steering, lighting system and braking system, etc. In addition, as EVs are equipped with systems for charging, power distribution and electricity storage, etc., where high voltage safety is important, vehicle examiners need to pay special attention. To keep up with the technological development, the TD will examine vehicle test equipment and the requirements of examiners from time to time, so as to keep abreast with the times, with a view to continuously upgrading the vehicle test equipment and examination technology. In addition, the TD is also actively enhancing manpower training, including sending staff to EV training centres for study visits and to participate in EV training

Summary of views	Government's responses
	courses arranged by the EV agents, and will introduce relevant examination equipment to dovetail with the development trend of EVs.
6.3. Increase the funding support to the research and development (R&D) projects on local electric commercial vehicles, so as to attract more local developers to participate in the R&D of local electric commercial vehicles.	The Partnership Research Programme under the Innovation and Technology Fund ('the Fund') aims to provide support to R&D projects undertaken by private companies in collaboration with R&D centres, local universities or other research institutions, so as to encourage private companies to carry out more R&D projects. Under the Programme, if private companies undertake R&D projects in collaboration with the Automotive Platforms and Applications Systems R&D Centre, they can obtain funding equivalent to 70% of the total project cost at most; if the company sponsors 50% or more of the project cost, the company can own all the intellectual property rights arising from the project. In addition, eligible private companies can also obtain cash rebate equivalent to 40% of their expenses for their relevant R&D projects through the Research and Development Cash Rebate Scheme under the Fund. Moreover, the Public Sector Trial Scheme under the Fund also provides funding support to eligible institutions and companies in producing prototypes/samples and conducting trials in the public sector so as to facilitate and promote the realisation and commercialisation of R&D results. To further promote the R&D and application of decarbonisation and green technologies, the

Summary of views	Government's responses
	Government has earmarked $200 million in 2020-21 for setting up Green Tech Fund (GTF) to provide better and more focused funding support to meet the needs of the R&D projects. The GTF funds projects of up to $30 million each for up to five years. Green transport is one of the priority R&D themes. We aim to invite the first round of applications in December 2020.
7. Other Comments	
7.1. Build partnerships with the trades and stakeholders.	In formulating policies on promoting the use of EVs and implementing different measures, the Government is committed to consulting and listening to the views of various stakeholders of the trades and the general public through different channels, so as to refine the formulation of policies.
7.2. Draw up the standards for installation of sound alerting devices in EVs to ensure the safety of the public, including the visually impaired. 7.3. Consider whether wheelchairs and electric scooters should also emit man-made sounds when running on roads. 7.4. The Government should review the regulatory regime	As EVs are relatively quiet whilst in motion, this has given rise to concerns from organisations and individuals about the potential danger such vehicles may pose to some road users when travelling at low speeds, especially to those with special needs such as visually impaired persons and senior citizens. In this connection, the Government has on the one hand relayed the wishes of visually impaired persons to local EV suppliers, requesting them to proactively introduce suitable sound alerting systems for their EV models to ensure the safety of road users. On the other hand, starting from 1 July 2021, all EVs or hybrid vehicles applying for type approval will be required to equip with a sound alerting system

Summary of views	Government's responses
for Electric Mobility Devices (EMDs) such as electric bicycles, so that conventional vehicles can be replaced by suitable devices for short-haul trips in public places.	that meets the relevant international standards. At the same time, the Government is also actively studying the necessary legislative amendments to incorporate relevant technical requirements. Regarding EMDs (including motorised personal mobility devices (PMDs), power assisted pedal cycles (PAPCs) and motorised personal mobility aids (PMAs)), 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. The TD has reviewed the practices 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. We consider that cycle tracks that are specifically designed for cycling may be more suitable for use of motorised PMDs (including electric scooters) and PAPCs. However, we consider that motorised PMDs and PAPCs should not be used on footpaths and carriageways. Motorised PMAs (including electric wheelchairs) are for essential mobility of the disabled and the elderly. Their use on

Summary of views	Government's responses
	footpaths is recommended, provided that their speed is restricted at a certain level. The TD has set up an Inter-departmental Task Group to review and develop the regulatory and technical requirements for EMDs such as speed control, safety gears, age restrictions on users, technical specifications, etc. The considerations also include whether there should be artificial sound provided when electric wheelchairs are travelling on footpaths.
7.5. The Government should review the Road Traffic Ordinance (Cap. 374) and relevant subsidiary legislation in due course, so as to see whether the relevant legislation is capable of supporting the development and application of autonomous vehicles (AV) and telematics.	Under the existing Road Traffic (Construction and Maintenance of Vehicles) Regulations (Cap. 374A) (the Regulations), apart from allowing telematics to provide drivers with information in compliance with the requirements of the Regulations (e.g. driving-related information), the Regulations could cater for the development of today's advanced driver assistance systems (e.g. Lane Keep Assist alert system), thereby facilitating the application of such systems on vehicles in Hong Kong for safer driving. On promoting autonomous vehicle (AV) technology, the TD set up the 'Technical Advisory Committee on the Application of Autonomous Vehicle Technologies in Hong Kong' in November 2019. The Committee, comprising representatives and experts from the trade and relevant research and development institutes, will explore how best to draw up an appropriate regulatory framework for AVs. The TD will work in close collaboration

Summary of views	Government's responses
	and liaison with the trade and make reference to local experience of trials of AV technology when contemplating the long term regulatory framework with necessary legal backing. Besides, the TD published a new set of 'Guidance Notes on the Trials of Autonomous Vehicles' in December 2019 to stipulate safety guidelines on the trials of AVs so that the trade could have a firmer grasp of the requirements for conducting AV trials on roads under the existing legislation. Separately, the TD has commenced studying the necessary legislative amendments with a view to allowing the trade to conduct trials of and use innovative technologies, and is working in close collaboration with the trade to jointly stipulate the regulatory model for AVs as well as the conditions and supporting measures required for trials of AVs. The objective is to create a suitable and safe road environment for such trials and use.
7.6. Raise the percentage of renewable energy (RE) power generation to 10% by 2030.	Generally speaking, the generation of RE relies on natural resources, such as solar, wind and hydro power. However, factors like the physical environment of Hong Kong have imposed a lot of constraints on the wide application of such RE. As set out in the Hong Kong's Climate Action Plan 2030+, based on currently mature and commercially available technologies, our estimate is that Hong Kong has a realisable RE potential of about 3% to 4% arising from wind, solar and waste-to-energy that can be exploited between now and 2030, with solar accounting for about 1%

Summary of views	Government's responses
	to 1.5%. However, we still face many technical and financial challenges in fully exploiting such RE potential, and there may also be pressure on tariff. This notwithstanding, the Government would still like to lead by example and play a leading role. Hence, the Government strongly supports public works on RE where technically and financially feasible. Making reference to the successful experience of the pilot floating solar energy generation systems at the Shek Pik and Plover Cove Reservoirs of the Water Supplies Department, we will study in detail the feasibility of installing a larger floating solar energy generation system at the Plover Cove Reservoir. We will also conduct a pilot project at the South East New Territories Landfill to install a solar energy generation system of a larger scale. In addition, the Government has set aside $2 billion since 2017-18 to install small-scale RE systems at existing government buildings, venues and facilities. A number of projects are being implemented gradually. The Government is also committed to creating favourable conditions for the public to participate in the development of RE, such as introducing the Feed-in Tariff (FiT) Scheme in 2018. The power companies will purchase electricity generated by private RE systems at a rate higher than the electricity tariff, thereby shortening the payback period of the RE systems to about 10 years and

Summary of views	Government's responses
	providing citizens with more incentives to invest in RE. Also, we relaxed the restrictions on the installation of solar energy generation systems on the rooftops of New Territories Exempted Houses (also known as 'village houses'), introduced Solar Harvest to install solar energy generation systems for eligible schools and welfare organisations for free, revamped the 'HK RE Net' to provide relevant information on RE and its installation, set up an enquiry hotline, and published guidance notes on the general requirements for installing solar energy generation systems, etc. If citizens install RE systems at their residential premises, they can be exempted from the payment of profits tax in respect of the payments received through their participation in the FiT Scheme, and also from the application for a business registration. The two power companies have received over 10,000 FiT applications from October 2018 to June 2020, of which over 8,600 have been approved. In comparison, only some 200 private RE systems were connected to the power companies' grids in the decade prior to introduction of the FiT Scheme. This proves that the FiT Scheme and the related facilitation measures implemented over the past year have been effective. Meanwhile, the Government encourages research and academic institutions to explore different types of RE and resolve related technical problems with innovative thinking and technologies. In this financial year, the Government has allocated $200

Summary of views	Government's responses
	million to set up the Green Tech Fund to subsidise relevant local research and development projects, which will be conducive to the further development of local RE.
7.7. Increase the distance between the people and places with high emissions, such as busy roads.	As regards the planning of a busy road and its nearby developments, the minimum buffer distance between roads and residential buildings or open space sites for public use is calculated in accordance with the recommended buffer distances set out in Table 3.1 of Chapter 9 of the HKPSG.
7.8. Sharing of motor vehicles through car sharing platforms should be encouraged to maximise the capacity of motor vehicles.	The existing legislation allows 'car pooling', which does not involve the carriage of passengers for hire or reward but allows drivers/vehicle owners to recover part of the journey cost (such as fuel cost and tunnel toll) from the passengers, as well as 'car sharing', which does not provide chauffeur services but charges a rental based on usage of the vehicles rented and comes with proper insurance coverage. These two types of car pooling/sharing arrangements are already lawfully used by some members of the public.

Annex 2

Information on the parking spaces in the car parks owned/managed by the HA and the HKHS and those installed with EV charging facilities

The HA provides car parking facilities in its public housing developments primarily to serve the residents or occupiers of the housing estates/courts concerned and their bona fide visitors for parking of their vehicles. As at the end of March 2020, the HA had a portfolio of some 31,800 parking spaces (including PC, motorcycle and light goods vehicle parking spaces) in 174 car parks.

The HA has, in accordance with the HKPSG revised in 2011, provided EV chargers for 30% of car parking spaces for PC in the new public housing developments; while the remaining 70% of car parking spaces for PC are also EV charging enabling. As at the end of March 2020, the HA has provided EV chargers for a total of about 1,000 parking spaces for PC in its 31 newly built car parks.

For other existing car parks, the HA will also provide charging facilities subject to technical feasibility and demand. As at the end of March 2020, the HA has installed EV chargers at a total of about 60 parking spaces for PC in 17 car parks.

As regards the HKHS, as at the end of January 2020, it owned or managed some 9,400 parking spaces and about 120 of them were installed with EV chargers.

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